**TEC-0087** 

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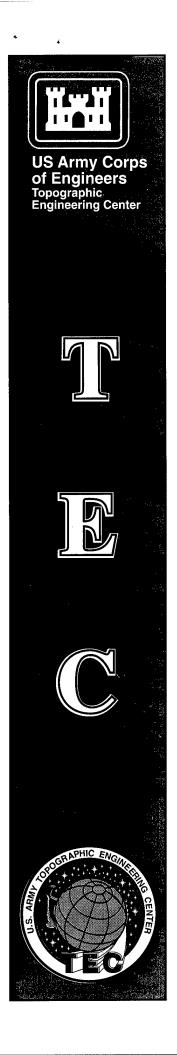
# Bibliography of In-House and Contract Reports, Supplement 20

Jean R. Diaz

October 1996

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U.S. Army Corps of Engineers Topographic Engineering Center 7701 Telegraph Road Alexandria, Virginia 22315-3864



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### **PREFACE**

This is Supplement 20 to the report titled, "Bibliography of In-House and Contract Reports" AD-877 653L; Supplement 1, AD-890 066L; Supplement 2, AD-905 548L; Supplement 3, AD-B005 275L; Supplement 4, AD-B010 642L; Supplement 5, AD-B019 966L; Supplement 6, AD-055 468; Supplement 7, AD-A068 744; Supplement 8, AD-A084 111; Supplement 9, AD-A099 803; Supplement 10, AD-A113 006; Supplement 11, AD-A128 400; Supplement 12, AD-A141 778; Supplement 13, AD-A160 607; Supplement 14, AD-A173 750; Supplement 15, AD-A195 953; Supplement 16, AD-A215 154; Supplement 17, AD-A252 543; Supplement 18, AD-A265 475; and Supplement 19, AD-A295 530. It is a continuing bibliography of reports prepared by and for the U.S. Army Topographic Engineering Center, Alexandria, Virginia. This bibliography includes reports that were published from 31 October 1994 through 1 October 1996.

Reports with AD numbers can be purchased by Department of Defense agencies from the Defense Technical Information Center; other agencies and individuals can purchase copies from the National Technical Information Service, Springfield, Virginia 22161-2171. Reports with a "B" in the AD number are limited in distribution to U.S. Government agencies unless permission for release is granted from the controlling office.

Colonel Robert F. Kirby was the Commander and Acting Director of the Topographic Engineering Center at the time of publication.

TEC-0059 AD A296 595

### AN INVESTIGATION OF KERNELS FOR SHADING OF ELEVATION DATA May 1995

Michael M. McDonnell

Keywords: Terrain Visualization, Elevation, Shaded Relief, Terrain Display, Geographic Data

This report examines the results of enhancing displays of an elevation array by using mathematical shading. The variable examined in this report is the shape of the primitive region by which shading is calculated. This primitive region is called a kernel. Three kernels are examined: triangles, quadrilaterals (actually squares), and a hybrid shape that seemed as though it might have fewer artifacts. The result is that shaded quadrilaterals seem to be more isotrophic and have fewer artifacts than the other shapes examined. Shading using quadrilateral kernels also is the easiest to calculate. All shading was done using the Gouraud technique.

TEC-0060 AD B195 984L

### DECISION AID FOR INTEGRATED AIR DEFENSE PLANNING October 1994

Richard Vargus Terry Dueck

Systems Control Technology, Inc.

DACA76-91-C-0022

Keywords: Defense, Computer-Aided, Modeling, Weapons

Technological sophistication of modern air defense weapons systems, and plans for integrating existing and future SAM/ATM systems, have created a need for theater air defense mission planning systems to aid in the air defense planning process. These systems focus on providing the air defense planner with tools to rapidly and intelligently respond to the dynamics of the battlefield environment. The objective of the Air Defense Command and Control Systems (ADCCS) office is to create an interoperable network of systems that provides force level and functional commanders at corps level and below with the means to synchronize the forces. The development of tactical decision aids designed to aid the planner in creating an effective air defense is well within this area of interest.

TEC-0061 AD A296 397

#### VISION-BASED NAVIGATION AND RECOGNITION, SECOND ANNUAL REPORT June 1995

Azriel Rosenfeld

University of Maryland

DACA76-92-C-0009

Keywords: Parallel Algorithms, 3-D Recovery, Motion Analysis, Vision-Based Navigation, Object Recognition

This report summarizes image understanding research dealing with many aspects of both navigation and recognition. This research has dealt with the following ten areas: (a) Parallel algorithms, (b) Invariant properties, (c) Image registration, (d) 3-D recovery, (e) Motion analysis, (f) Vision-based navigation, (g) Function-based recognition, (h) Face recognition, and (i) Document understanding. The work done in these areas is summarized in Sections 2-10 of this report. Further details about this work can be found in 12 technical reports issued on the Contract during the period April 1993 - March 1994. A bibliography of these reports is given in Section 11 of this report; the numbers in brackets in Sections 2-10 refer to this list.

TEC-0062 AD A296 870

#### A SYSTEM FOR AUTOMATED SIGHT MODEL ACQUISITION AND EXTENSION - RADIUS June 1995

Robert Collins Edward Riseman Allen Hanson

University of Massachusetts

DACA76-92-C-0041

Keywords: Aerial Image Understanding, Feature Extraction, Site Modeling, Image Extraction

The goal of the Research and Development for Image Understanding Systems (RADIUS) project is to develop image understanding (IU) algorithms that support model-based aerial photo interpretation. This report, funded under a 3-year contract to develop algorithms for automated geometric sight modeling, describes research activities performed during the first year, October 1992 through October 1993.

TEC-0063 AD A302 492

## THE ALBE GRIDDED VISIBILITY MODEL May 1995

Vernon Stoltz

Keywords: Visibility, Line-of-Sight, Tactical Decision Aid, Elevation, Digital Terrain

The AirLand Battlefield Environment (ALBE) visibility model provides a new method of calculating Line-of-Sight visibility products derived from digital terrain elevation data. This new method uses a gridded raster approach rather than the historical vector approach. The basic principles and assumptions behind the model are discussed, starting with the advantages and disadvantages of using the gridded versus a vector approach. New methods devised to handle the gridded approach are discussed, including how to determine the grid cell resolution, the spacing between individual radials, and a detailed look at determining the spacing between individual points along a radial. A new method that uses a unique step size for each individual radial is described in detail. Other features covered are the earth's curvature, the inclusion of vegetation data, the visual acuity, and an elevation matrix form to help select a precise observer location. Finally, other closely related models that are based on the basic visibility model are discussed, including How High to Visibility, Radio Frequency Loss, Visibility Probability, Line-of-Sight for Obstacles, Aerial Detection, and Helicopter Approach Zones.

TEC-0064 AD A296 398

## RADIUS: MODEL-BASED OPTIMIZATION July 1995

Thomas M. Strat, Sr. Lynn H. Quam, Sr. Pascal V. Fua

SRI International DACA76-92-C-0034

Keywords: Computer Vision, Aerial Image Analysis, RADIUS, Optimization, Snakes

The construction and use of 3-D models of military and industrial sites will allow revolutionary advances in the speed, confidence, and range of analytical techniques with which an Image Analyst (IA) develops and reports intelligence information. This SRI research project, in support of the RADIUS Program, seeks to increase the speed and accuracy with which site models can be constructed from current imagery by developing a new family of image understanding (IU) techniques, and by developing a novel way for an IA to employ them.

TEC-0065 AD A317 347

### SCALABLE PROCESSING FOR DISTRIBUTED SIMULATION AND SCENE GENERATION July 1995

Brahm A. Rhodes Steve D. Bronson

Onyx Sciences Corporation

DACA76-94-C-0007

Keywords: Massively Parallel Processing, Terrain Rendering, Computer Graphics, Visual Simulation

This report details the results of researching and evaluating massively parallel architectures and visualization techniques. The main focus of this project was to evaluate and determine the potential of parallel computing systems for visual simulation applications, such as distributed interactive simulation, scene generation, visualization and others. This report summarizes results of our performance tests; describes scenarios and architectures that exploit parallel processors for visual simulation applications; discusses the state of the parallel computing industry; and presents recommendations for further research and development. Furthermore, this document describes a prototype toolkit to explore various options for using parallel processors for visual simulation.

TEC-0066 AD B206 619L

# DEVELOPMENT OF A STATISTICAL METHOD FOR THREE-DIMENSIONAL TERRAIN ELEVATION ERROR ANALYSIS, PHASE II July 1995

David J. Dermody Gary M. Wrap

TRIFID Corporation

DACA76-92-C-0026

Keywords: Digital Terrain Elevation Data, DTED, DTM Accuracy, Error Propagation, Visibility

Digital Terrain Elevation Data (DTED) has been produced by the Defense Mapping Agency (DMA) since 1974 as one of two primary data components of the Digital Landmass System (DLMS) Data Base. Typically, the DoD user is not familiar with the error in the DTED because of the specification limitations, the materials used in DTED production, and the production processes employed in the generation of DTED. Also, the user may be unaware of existing and conceptual methodologies for the accuracy evaluation of DTED. This unawareness of DTED limitations may lead to critical errors in the tactical decision making process. This report examines the effect of these accuracy limitations through error propagation in five tactical applications: Radial Terrain Masked Area plots, Incoming Target Acquisition, Flight Line Masking, Cross-Country Mobility, and Volume Computation. To support this error propagation, techniques were developed to evaluate DTED in the absence of DMA accuracy data to determine the likely production method. The evaluation of several DTED cells was performed against a variety of control sources to provide artificial intelligence used to access DTED cells in the tactical applications.

TEC-0068 AD A302 505

## SPECTRAL SIGNATURES OF WETLANDS PLANTS (350-990nm) August 1995

John E. Anderson

Keywords: Wetlands, Reflectance, Spectral Signatures

Field spectral reflectance measurements (350-900nm) were collected on select coastal and freshwater wetland plant canopies during the 1994 growing season. In this report, the author catalogues the signatures obtained for tidal and non-tidal specimens. This is the first report in an overall compendium of wetland plant signatures. In addition, this reference includes algal biomass and soil signatures.

TEC-0069 AD A303 483

### PASSIVE RECOVERY OF SCENE GEOMETRY FOR AN UNMANNED GROUND VEHICLE September 1995

Robert C. Bolles Martin A. Fischler

SRI International

DACA76-92-C-0003

Keywords: Stereo Analysis, Motion Analysis, Unmanned Ground Vehicle, FLIR, Semantic Scene Sketch

The goal of this project was to develop techniques for constructing 3-D descriptions of outdoor scenes to support the navigational needs of an Unmanned Ground Vehicle (UGV), operating both during the day and at night. In this report we describe our progress in four areas: Stereo Evaluation—We performed an in-depth evaluation of three representative stereo techniques by analyzing the results on 49 stereo pairs; Stereo Sketch—We developed a high-level representation of an outdoor scene, which we call a "scene sketch," that can describe the semantic, as well as geometric properties of a 3-D scene; Spatiotemporal Filtering—We developed a technique for increasing the resolution and robustness of passive range sensors by integrating stereo and motion analysis; FLIR Stereo—We demonstrated the effectiveness of stereo analysis applied to infrared data, which makes passive night driving possible.

TEC-0070 AD A303 204

### TASK-DRIVEN ACTIVE VISION FOR SECURITY AND SURVEILLANCE January 1996

H. Keith Nishihara Stanley J. Rosenschein Phil Kahn J. Brian Burns Matthew Turk

Teleos Research DACA76-93-C-0017

Keywords: Physical Security, Recognition, Figure-Ground, Real-Time Tracking

Teleos is developing and integrating active vision technology with intelligent, domain-specific control strategies to provide real-time visual detection, characterization, and tracking of objects in the security and surveillance domain. Work to date has focused on theoretical studies and experimentation in the areas of attentional mechanisms, figure-ground discrimination, recognition, and active sensor mechanisms to support visual surveillance. The primary research focus is on the detection and tracking of humans in a monitored area. This report describes new results in blob-based shape recognition; the use of oriented texture blobs for face-finding; and stereo-based real-time figure-ground discrimination techniques.

TEC-0071 AD A317 316

# GPS TIDES: A PROJECT TO DETERMINE TIDAL DATUMS WITH THE GLOBAL POSITIONING SYSTEM August 1995

Stephen R. DeLoach

Keywords: Global Positioning System (GPS), OTF Ambiguity Resolution, Tidal Datums, Tide Gauges

The recent development of On-the-Fly (OTF) ambiguity resolution techniques with Global Positioning System (GPS) observations has created a powerful tool for the study of dynamic time series, such as tidal analysis or the study of water level heights. For this project a GPS receiver was successfully operated on board a Canadian Coast Guard navigation buoy. Ten days of data, at a one-second sampling interval, were collected at a station in the open waters of the Bay of Fundy, followed by 10 days from an inshore mooring. The buoy data were transmitted in real time to a reference station on shore where antenna heights were computed in real time. Subsequent processing reduced the 1-Hz antenna height series to a 15-minute water surface height series for comparison to two nearby "conventional" gauges. These were the Saint John Harbour permanent gauge and a temporary Socomar pressure gauge. Mean tide heights computed from the inshore data are all within 1 cm. The means, computed from the inshore series, differed by 20 cm between the buoy and the "conventional gauges," indicating a differential slope between the ware surface and the ellipsoid. In addition to the water surface measurements, about 20 days of GPS data were collected from a static baseline to characterize the performance of the OTF GPS system, without the influence of a moving platform. From the 20 days of data, 97 percent is within 3 cm of truth, while the mean daily heights are about 0.3 cm below the truth. This project has demonstrated that the "GPS buoy" is a viable method of tidal datum determination and it should be possible to use the ellipsoid as the basis for water surface datums.

TEC-0073 AD A315 105

#### IFSAR DATA FOR AUTOMATED RAPID MAPPING—PHASE I SBIR October 1995

**Vexel Corporation** 

DACA76-95-C-0007

Keywords: Interferometric Synthetic Aperture Radar (IFSAR), Rapid Mapping Classification, Feature Extraction, Digital Elevation Model (DEM)

This report summarizes work in the area of feature-based classification of interferometric synthetic aperture radar (IFSAR) imagery. This work will support the Army's goal of doing "rapid mapping." The potential of the new airborne IFSAR mapping instrument designed, built, and operated by the Environmental Research Institute of Michigan (ERIM) also is evaluated. This IFSAR system is tasked with high-resolution mapping. The focus of the Phase I task was to use all three of these data sets to extract map elements. These elements include land-use polygons, elevation contours, hydrology networks, transportation networks, buildings, and other manmade structures. This report shows that the IFSAR data are suitable for distinguishing major categories of land use, such as urban areas, forests, fields, open water, and swamps. Major road networks also can be vectorized automatically from the data. A significant result is a new technique that was developed that enables extraction of the "bald earth" elevation from the IFSAR elevation provided. This allows further extraction of features on the "bald earth," such as buildings, electric power line towers, and tree stands. Example map products illustrating these results are provided in this report.

TEC-0074 ADA302 762

### COMPUTER AUTOMATED IMAGE CLASSIFICATION November 1995

K. O'Rourke

Pacific-Sierra Research Corporation

DACA76-95-C-0012

Keywords: Synthetic Aperture Radar, Digital Terrain Elevation, Map Reduction, Neural Networks, Drainage Systems, Automated Images

The primary objective of the research and development was to achieve classification and feature extraction from high-resolution digital terrain elevation (DTE) data and corresponding fine resolution SAR imagery generated from interferometric synthetic aperture radar (IFSAR) data. The report contains six sections. Section 1 contains a project summary that describes the objectives, approach, results, and conclusions of the Phase I project. Section 2 presents a discussion of future research and development recommended for a Phase II SBIR program. Section 3 presents details on the image data used for developing the image classification algorithms. Section 4 describes details of neural network (NN) algorithms investigated for image classification. Section 5 describes an image processing technique for extracting a specific feature type (water drainage systems) from high-resolution digital terrain elevation (DTE) data. Section 6 presents the technical results obtained during the Phase I project.

TEC-0076 AD B205 861L

### DIS TERRAIN DATA FORMAT STUDY November 1995

Deb Herman
Scott Barrett
Tim Langevin
Kevin Trott
Audrey Copperwheat

PAR Government Systems Corporation

DACA76-90-D-0001

Keywords: Distributed Interactive Simulation, Synthetic Environments, Digital Topographic Data (DTD), Spatial Data Formats, Terrain

The purpose of this report is to provide descriptions and comparisons of existing and developing standard Digital Topographic Data (DTD) and Distributed Interactive Simulation (DIS) terrain data exchange formats in the context of general DIS community requirements for terrain data. An analysis of these formats was made to determine each format's key features and its ability to support the DIS community. Each format was examined relative to the support that it provides for each of the following key characteristics: metadata; topology, ranging from Level 0 (none) to Level 3 (full topology support); spatial organization and indexing; feature and attribute coding; text; composite features; integration and/or layering; multiple levels of detail; 3-D data; 3-D model behaviors; and, coordinate systems and datums. The results of this study identified key spatial data modeling and representation concepts provided by these formats which should be included in future synthetic environment data interchange standards.

TEC-0077 AD A303 485

# REPRESENTATION, MODELING AND RECOGNITION OF OUTDOOR SCENES January 1996

Martin A. Fischler Robert C. Bolles

SRI International DACA76-92-C-0008

Keywords: Machine Vision, Automated Scene Analysis, Object Recognition, Terrain Modeling

The goal of this project is to advance the state-of-the-art in scene interpretation for autonomous systems that operate in natural terrain. In particular, techniques are being developed for representing knowledge about complex cultural and natural environments so that a computer vision system can successfully plan, navigate, recognize and manipulate objects, and answer questions or make decisions relevant to this knowledge. The results to date include the development of new representations for rapidly modeling terrain from multiple images—including 3-D hexagonal surface meshes and "participle-based" 3-D modeling primitives that allow a robotic system to incrementally build a complete geometric model of its environment. We have also extended and improved our set of object recognition primitives to allow reliable labeling of such scene attributes and components as color, texture, shadows, and a variety of linear structures (skyline, ridgelines, roads, etc.). The most recent results are detailed in four published papers included as appendices to this report.

TEC-0078 AD A303 607

### IMAGE UNDERSTANDING ENVIRONMENT FOR ARPA-SUPPORTED RESEARCH AND APPLICATIONS January 1996

Douglas Morgan

Booz, Allen and Hamilton, Inc.

DACA76-89-C-0023

Keywords: Image Understanding, Environments, Object-Oriented Specification

This report documents the design and development of a Vision Environment system and contributions to the design of the ARPA Image Understanding Environment (IUE). The primary contributions are to an object-oriented specification of a hierarchy of classes for image understanding applications. Analyses of implementation issues in both the C++ and Common Lisp languages also are presented.

TEC-0079 AD A303 480

# RESEARCH IN MODEL-BASED CHANGE DETECTION AND SITE MODEL UPDATING January 1996

R. Nevatia

University of Southern California

DACA76-93-C-0014

Keywords: Change Detection, Fine Registration, Matching, Perceptual Grouping, Shadow Analysis Model Construction

Change detection is perhaps the most important task in the process of photo interpretation, and an ideal one to demonstrate the effectiveness of the site modeling exploitation (SME) approach that has been adopted for the RADIUS program. Change detection is a tedious task as it requires careful comparison of images (and their models) taken at different times under possible varying conditions. The task of change detection consists of comparing a new image of a site (or a collection of images), to the information contained in the folder for that site. The information in the site folder may consist of one or more previous images and results of previous analyses on these images. We believe that even partial automation of this task will greatly increase an analyst's productivity and possibly enhance the reliability of the results.

TEC-0080 AD A307 126

# EL NINO—ITS FAR-REACHING ENVIRONMENTAL EFFECTS ON ARMY TACTICAL DECISION AIDS March 1996

John Neander

Keywords: El Nino, Tactical Decisions, Ocean Currents, Logistical Planning, Weather Patterns, Climate Change

El Nino. A series of benign changes in pressure and temperature over Darwin, Australia and Tahiti often results in significant changes in oceanographic and atmospheric patterns around the world. These, in turn, can produce short-term weather changes that impact vested interests of the United States on the world's political and military arenas. At the onset of an El Nino, the oceanographic changes are complemented by atmospheric changes that result in abrupt weather pattern reversals in a seasonal and a geographic context. The two weather extremes to consider from an El Nino event are droughts and floods. To know the likely implications of an El Nino event in advance will allow strategic and logistic planners to more accurately decide what type of weapons and support material will work best for the United States in the various world theaters.

TEC-0081 AD A315 104

### AN ASSESSMENT OF THE HORIZONTAL ACCURACY OF INTERIM TERRAIN DATA April 1996

Louis Fatale
Jeffrey Messmore
James Ackeret

Keywords: Accuracy, Global Positioning System (GPS), Terrain Data, Geographic Information System (GIS)

Within the U.S. Army and throughout the private sector, the accuracy of Digital Topographic Data (DTD) is often taken for granted. Users assume terrain data to be accurate merely because of its digital nature. This report describes a study that was undertaken to determine the horizontal accuracy of Interim Terrain Data (ITD), a 1:50,000-scale terrain analysis data base. ITD is composed of vector features and associated attributes representing land cover characteristics. It is produced by the Defense Mapping Agency (DMA) and provided to the U.S. Army to support near-term requirements on an interim basis until more standardized data are available. Because of its interim nature. ITD may be digitized from hard-copy source ("carto-controlled") or produced solely from photography ("photo-controlled"). No definitive accuracy statement is provided with the data. This study was initiated in 1994 with the collection of ground coordinates for more than 400 selected ITD features. Each feature was located in the field using a Precise Lightweight Global Positioning System Receiver (PLGR) in the Precise Positioning Service (PPS) mode (10meter horizontal accuracy). Universal Transverse Mercator (UTM) coordinates obtained from the PLGR were annotated for each feature. The UTM coordinates for coincident features in the ITD digital files were subsequently extracted by GIS query to compare statistically the digital data with the field data, calculate the offsets, and determine the horizontal accuracy of the ITD. The potential accuracy differences between the carto- and photo-controlled ITD and the variability of natural vs. man-made features also are discussed.

TEC-0082 AD A317 240

### THE UMASS RADIUS PROJECT—YEAR 2 October 1996

Robert Collins Allen Hanson Edward Riseman

University of Massachusetts

DACA76-92-C-0041

Keywords: Building Extraction, Site Model Acquisition and Extension, Aerial Image Understanding, 3-D Scene Visualization

A set of image understanding (IU) algorithms for automated site model acquisition and extension are being developed at the University of Massachusetts. In 1995, a building extraction system was implemented to acquire flat roofed, rectilinear building models from multiple, monocular images. This system hypothesizes building rooftops from a single image, then searches for supporting evidence in other views and determines the precise 3-D shape and location of each building via multi-image triangulation. Projective mapping of image intensity information onto these polyhedral building models results in a realistic site model that can be rendered using virtual "fly-through" graphics. To perform model extension, a prior site model is registered to new images, and building model acquisition procedures are focused on previously unmodeled areas. In an operational scenario, this process would be repeated as new images become available, gradually accumulating evidence over time to make the site model data base more complete and accurate. Model-to-image registration techniques also are presented that can be used to automatically determine model-based local corrections to the resected camera parameters provided with each image.

TEC-0083 AD B215 801L

# PERSONAL NAVIGATION AND REPORTING, PHASE II April 1996

Robert W. Levi Tom Judd

Point Research Corporation

DACA76-94-C-0005

Keywords: Navigation, Personal Navigation, Dead Reckoning Navigation

This report describes the development of a prototype Personal Navigation and Reporting System (PNRS). The purpose of the PNRS was to investigate and develop a self-contained navigation system for dismounted soldiers. The system would be based on a magnetic compass, altimeter, and a personal distance measuring device. Data from the navigation system would be used as a supplement to GPS position information. The project was achieved in two phases. The feasibility and general approach were developed in Phase I. Prototype hardware and software were developed and tested during Phase II.

TEC-0084 AD A317 028

### THREE-DIMENSIONAL MODELING STATION, PHASE II October 1996

Lei Zhang Javier F. Maida Gregory D. James

Mandex, Inc.

DACA76-93-C-0027

Keywords: Model Library, 3-D Modeling, Model Data Set, Computer Graphics, Graphics Work Station, Simulation

The objective of this Phase II SBIR project was to provide the U.S. Army Topographic Engineering Center (TEC) with a 3-D Modeling Station composed of hardware, software, and development tools, and to create and populate a data base with models of suitable features found in Defense Mapping Agency's (DMA) Interim Terrain Data (ITD) set, at an appropriate level of detail. A low-end DOS-based system and a high-end UNIX-based system were configured to meet the varied requirements of simulator data base development, and more than 160 3-D feature models were created using the modeling stations. These models represent terrain features, both natural and man-made, defined in the DMA's ITD. Models are available in AutoCAD DXF, IRIS Open Inventor (IV), and Wavefront OBJ formats. A relational data base was designed and created to store the model information, and serves as a standard model library. A DBMS system with the X-Window/Motif graphical user interface was developed to provide tools for model data manipulation and management. Dynamic model placement tools were developed for placing models into simulation scenes. Using these tools, the following three feature types can be placed: point, linear, and area.

TEC-0085/0085A AD B214 459L

### A STUDY OF ARMY REQUIREMENTS FOR MAPPING, CHARTING, AND GEODESY/DIGITAL TOPOGRAPHIC DATA July 1996

Thomas E. Lee

William L. Othling, Jr.

Steven M. DiSilvio

F. Leslie Speir

Denise Hovanec, TEC

Science Applications International Corporation

DACA76-90-D-0002

Keywords: Digital Topographic Data, Terrain Elevation Data, Feature Data, Data Content, Data Resolution, Data Accuracy

The Defense Mapping Agency (DMA) is beginning production of the digital land combat products required by the U.S. Army. Requirements for these products were initially documented and provided to DMA in the 1984 "Army Digital Topographic Data Requirements" document. At the request of the Deputy Chief of Staff of the Army for Intelligence, the U.S. Army Topographic Engineering Center (TEC) completed another requirements study intended to revalidate previously stated requirements, and assess the ability of planned and current products to meet these requirements. This report documents new feature and attribute requirements and addresses scale and resolution requirements for the 58 Army users surveyed.

TEC-SR-6 AD A292 131

# A HISTORY UPDATE OF THE U.S. ARMY ENGINEER TOPOGRAPHIC LABORATORIES, FORT BELVOIR, VIRGINIA, 1984-1988 August 1994

Robert Hellman

Keywords: ETL History, Research and Development, Mapping, Surveying

This document presents the historical changes and growth of the U.S. Army Engineer Topographic Laboratories from 1984 to 1988. It also provides a general description of the research and development programs during this period.

TEC-SR-7 AD A307 127

### HANDBOOK FOR TRANSFORMATION OF DATUMS, PROJECTIONS, GRIDS AND COMMON COORDINATE SYSTEMS January 1996

Frederick Gloeckler Richard Joy Justin Simpson Daniel Specht

Keywords: Cartography, Datums, Projections, Geodesy, Coordinates

This document provides Army organizations and agencies with general guidance on selecting the appropriate methods for shifting between local geodetic datums and the World Geodetic System (WGS), and for converting Cartesian and map projection coordinates to and from geodetic coordinates. This guidance is provided to aid the Army community in selecting datum shift algorithms, in developing, selecting, and maintaining software using these algorithms, and in implementing this software to support operational units. Equations are furnished for map projections and datums commonly used within the Army, and references are provided for other, less commonly encountered, map projections and datums.

#### **PAPERS**

ACKERET, James, See FATALE.

ANDERSON, John, "Spectral Reflectance of Wetland Plants," National Interagency Workshop on Wetlands, 3-7 Apr 95, New Orleans, LA.

ANDERSON, John, See GETLEIN.

ANDERSON, John, See EASTES.

BARR, Samuel, "Special Applications of Spectral Sensing," ISSSR, 26 Nov-1 Dec 95, Melbourne, Australia.

BENTON, John, et al., "Tactical Route Planning: New Algorithms for Decomposing the Map," IEEE International Conference on Tools for AI, 6-8 Nov 95, Washington, D.C.

BERGMEN, Kenneth, "On the Application of Interferometric Synthetic Aperture Radar (IFSAR) Products for Rapid Mapping," International Geoscience and Remote Sensing Symposium, 27-31 May 96, Lincoln. NE.

BOGE, Walter, "U.S. Army Topographic Engineering Center (TEC) Overview," First Consolidated Army Topographic, Terrain Analysis and Multispectral Imagery Conference, 13-15 Nov 95, Fort Belvoir, VA.

BOSCH, Edward, "The Effects Different Neural Network Architectures have on the Exploitation of Hyperspectral Data," ISSSR, 26 Nov-1 Dec 95, Melbourne, Australia.

BOSCH, Edward, and SHINE, James, "Evolutionary Experiments to Optimize Hidden Layers for Hyperspectral Imagery Classification," World Congress on Neural Networks, Sep 96, San Diego, CA.

CATANIA, Luke, and LIN, Tai-Ti, "The Joint Precision Strike Integration and Evaluation Center," 20th Army Science Conference, 25-27 June 96, Norfolk, VA.

CHEN, Pi-Fuay, and TRAN, Tho Cong, "Edge Detection and Image Smoothing Using Neural Networks," Proceedings of the 1995 World Congress on Neural Networks, Washington, D.C.

CORL, Phyllis, See RINKER.

**DELOACH**, Stephen, "An International Vertical Reference for Hydrography," 10th Hydrographic Society Symposium, 24-26 Sep 96, Rotterdam, Netherlands.

**DELOACH**, Stephen, "Delineation of Tidal Datums and Water Surface Slopes with the GPS," Sea Technology, March 1995, Vol. 36, No. 3.

**DELOACH**, Stephen, "GPS Tides and Water Levels," 10th Hydrographic Society Symposium, 24-26 Sep 96, Rotterdam, The Netherlands.

### **PAPERS** (continued)

DELOACH, Stephen, "Why On-the-Fly? GPS World Magazine, May 1995, Vol. 6, No. 5.

**DELOACH**, Stephen, and **OIMOEN**, Daniel, "The Many Facets of GPS," 20th Army Science Conference, 25-27 June 96, Norfolk, VA.

EASTES, John, KRUSINGER, Alan and ANDERSON, John, "Spectral and Thermal Measurements with a Field Portable Infrared Emmitance Spectrometer: Implications for Diverse Environmental Monitoring and Research," ISSSR, 26 Nov-1 Dec 95, Melbourne, Australia.

EHLEN, Judy, "Analysis of Fracture Patterns Using Remote Sensing," Geological Society of America Abstracts with Programs, vol. 26, 1994.

EHLEN, Judy, "Classification of Dartmoor Tors," In Rock Weathering and Landform Evolution, D.A. Robinson and R.B.G. Williams, John Wiley and Sons, 1994.

EHLEN, Judy, et al. "Fracture Recognition in Digital Imagery," Proceedings of the 35th U.S. Symposium on Rock Mechanics, 1995, Brookfield, VT.

EHLEN, Judy, "Granite Weathering—A Scale Invariant Phenomenon?" Geological Society of America Abstracts with Program, vol. 28, 1996.

EHLEN, Judy, "Predicting Fracture Characteristics Using Three-Dimensional Modeling," 1st International Conference on Geocomputation, 17-19 Sep 96, Leeds, England.

FATALE, Louis, MESSMORE, Jeffrey, and ACKERET, James, "An Assessment of the Horizontal Accuracy of Interim Terrain Data," Proceedings of the Second International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, 21-23 May 96, Fort Collins, CO.

FRODGE, Sally, "Performance of the Real Time On-the-Fly GPS Positioning System on Board a Dredge," Proceedings of the Institute of Navigation (ION), 18-20 Jan 95, Anaheim, CA.

GETLEIN, Stephen, SLOCUM, Kevin, and ANDERSON, John, "Off-the-Shelf in the Field: Innovative Technologies for Natural Resource Management," Department of Defense Environmental Technology Workshop, 22-24 May 95, Hershey, PA.

GETLEIN, Stephen, SLOCUM, Kevin, and ANDERSON, John, "Integrated Vegetation Data Collection," Department of Defense Environmental Technology Workshop, 22-24 May 95, Hershey, PA.

GRAFF, Brian, "Inferring Bridges from Digital Cartographic Sources Using Arc/Info," Environmental Systems Research Institute (ESRI), May 96, Redlands, CA.

HANSEN, John and JOHNSON, Peter, "Interferometric Synthetic Aperture Radar Applications to Crisis Support," ISSSR, 26 Nov-1 Dec 95, Melbourne, Australia.

### **PAPERS** (continued)

HEVENOR, Richard, "Extraction of Water Regions from Radar Imagery Using a Discrete Biorthogonal Wavelet Transform," 1995 SPIE OE/Aerospace Sensing and Dual Use Photonics Symposium, 17-21 Apr 95, Orlando, FL.

HOVANEC, Denise, "1995 Army DTD Requirements Study," First Consolidated Army Topographic, Terrain Analysis and Multispectral Imagery Conference, 13-15 Nov 95, Fort Belvoir, VA.

JOHNSON, Peter, See HANSON.

JOY, Richard, "MC&G Software Reuse Science and Technology Objectives," First Consolidated Army Topographic, Terrain Analysis and Multispectral Imagery Conference, 13-15 Nov 95, Fort Belvoir, VA.

KARPISCAK, John, III, "Enabling Technologies for the Warfighter," 20th Army Science Conference, 25-27 June 96, Norfolk, VA.

KOKLAUNER, Karl, See TURNER.

KRUSINGER, Alan, See EASTES.

LIN, Tai-Ti, See CATANIA.

MESSMORE, Jeffrey, See FATALE.

OIMOEN, Daniel, "U.S. Army GPS Survey—Capabilities and Limitations," First Consolidated Army Topographic, Terrain Analysis and Multispectral Imagery Conference, 13-15 Nov 95, Fort Belvoir, VA.

RAND, Robert, "Exploitation of Hyperspectral Data Using Discriminate and Constrained Subpixel Demixing to Perform Automated Material Identification," ISSSR, 26 Nov - 1 Dec 95, Melbourne, Australia.

RINKER, Jack, and CORL, Phyllis, "A Hypermedia Terrain Data Base for Desert Operations," First Consolidated Army Topographic, Terrain Analysis and Multispectral Imagery Conference, 13-15 Nov 95, Fort Belvoir, VA.

RYDER, William, See VOYADGIS.

SANTORO, Mary Pat, "Viewgraphs on TEC/OD-IG Role in the Army MSI Program," First Consolidated Army Topographic, Terrain Analysis and Multispectral Imagery Conference, 13-15 Nov 95, Fort Belvoir, VA.

SHINE, James, "A Genetic Algorithm Approach for Configuring Backpropagation Architecture for Imagery Classification," World Congress on Neural Networks (WCNN '95), 17-21 July 1995, Washington, D.C.

SHINE, James, See BOSCH.

### **PAPERS** (continued)

SLAMA, Michael, and FLY, Brian, "Maps Hybrid: Formal Qualification Performance Test Results," 1996 Position Location and Navigation Symposium, April 1996.

STOLTZ, Vernon, TEC, and SCHMIDT, Eric, TASC, "Weather in Distributed Interactive Simulations (WINDS)," Cloud Impacts on DOD Operations and Systems (CIDOS), 24-26 Oct 95, Lexington, MA.

TRAN, Tho Cong, See CHEN, Pi-Fuay.

TURNER, Jeffrey, and KOKLAUNER, Karl, "Dynamic Environment and Terrain in a Virtual World," 20th Army Science Conference, 25-27 June 96, Norfolk, VA.

VOYADGIS, Demetra, and RYDER, William, "Measuring the Performance of Ground Slope Generation," Environmental Systems Research Institute (ESRI), May 96, Redlands, CA.

WEIPERT, Mark, "Army Centralized Digital Terrain Data Repository," First Consolidated Army Topographic, Terrain Analysis and Multispectral Imagery Conference, 13-15 Nov 95, Fort Belvoir, VA.

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# **APPENDIX — TITLES 1953 - 1996**

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Accuracy of Cartometric Data	AD 810 496	1966
Accurate Emphemeris Time Determination and	ETL-RN-72-4	1972
Geocentric Stations Position from Photographs		
of the Moon Against Stellar Background		
Acousto-Optic Technology for Topographic	ETL-0256	1981
Feature Extraction and Image Analysis		
Adjunct Development Test II (DT II) of Position	ETL-0217	1980
and Azimuth Determining System AN/USQ-70		
Acquisition and Evaluation of Thermal Standard	ETL-0218	1980
Data		
ADRIES Prototype System Development Program (1986-1990)	ETL-0577	1990
Advanced Continuous Tone Plate and Process	ETL-0056	1975
Compatible with Present Military Lithographic		
Reproduction Equipment and Practices		
Advanced Digital Radar Imagery Exploitation	ETL-0578	1990
Robust System (ADRIES) Annual Report		
Advanced Digital Radar Imagery Exploitation	ETL-0579	1990
System (ADRIES) Final Report (1986-1990)	ETL-0295	1983
Advanced Edit System Advanced Development Prototype (ADP) for the	ETL-0293 ETL-0392	1987
Quick Response Multicolor Printer (QRMP)	E1E-0372	1707
Advanced Feature Symbolization for Three-	ETL-0223	1980
Dimensional Views		2,00
Advanced Methods for the Calibration of Metric	AD 706 870	1968
Cameras		
Advanced Radar Topographic Application	ETL-CR-73-2	1973
Advanced Satellite Hardware/Software System Study	ETL-0225	1980
Advanced Satellite Tracking Instrumentation Study	AD 882 2546	1968
Advanced Study of a Position and Azimuth	AD 844 930L	1968
Determining System (Final)		
Advanced Study of a Position and Azimuth	AD 848 369L	1968
Determining System (Addendum)		
Advanced Study of a Position and Azimuth	AD 861 446L	1969
Determining System (Supplement)		
Advanced Techniques for the Reduction of Geodetic	AD 640 238	1966
SECOR Observation (Final)		
Advanced Techniques for the Reduction of Geodetic	AD 664 744	1967
SECOR Observation (Supplement)		
Aerial Triangulation by Least Squares, Final Report	AD 140 062	1957
AGFA Contour Film	ETL-TR-73-1	1973
Airborne Positioning and Attitude Data	AD 815 525L	1967
Application Study, Phase I	1 D 01 F 52 57	10.5
Airborne Positioning and Attitude Data	AD 815 526L	1967
Applications Study, Phase II		

Air Photo Analysis, Photo Interpretation Logic,	ETL-0329	1984
and Feature Extraction	TTC 0063	1005
ALBE Gridded Visibility Model, The	TEC-0063	1995
Algorithms for Digital Terrain Data Modeling	ETL-0302	1982
All-Weather Mapping Contour Plotting Program	7777 0000	1965
Alternative Theories of Inference in Expert	ETL-0382	1985
Systems for Image Analysis	1050 TD	1054
Altimeter, Surveying, 4500 Meters, 2-Meter	1350-TR	1954
Divisions	ETT 0006	1075
Analog Graphic Processing for 3-D Terrain	ETL-0026	1975
Displays, Profiles, and Elevation Layer Tints	EDI OD 61 4	1071
Analog to Digital Converter to Digital Magnetic	ETL-CR-71-4	1971
Recorder Interface	TOT OD 64.5	1074
Analysis and Development of Digital Mapping	ETL-CR-74-5	1974
System Software		
Analysis and Development of Image Statistics and	ETL-0239	1980
Redundancy Removal		
Analysis and Simulation of Discrete Digital Image	ETL-0278	1981
Matching		
Analysis and Test Results of a Gyrocompass		
With Reduced Susceptibility to Shock,		
Vibration, and Motion	ETL-0501	1988
Analysis and Tests of Environmental Effects on	ETL-0378	1984
Gyrocompassing Accuracy		
Analysis of Air Photo and Radar Imagery		
of Barro Colorado Island, Panama, An	ETL-0540	1989
Analysis of a Relaxation Scheme to Improve Terrain	ETL-0298	1982
Elevation Data, An		
Analysis of Edge Detection Algorithms on DIAL	ETL-0371	1985
Analysis of GEOS PC-1000 and SECOR Data	AD 882 165L	1967
Analysis of Interactive Image Cleansing Via	ETL-0347	1983
Raster-Processing Techniques		
Analysis of LANDSAT Systems for Cartographic and	ETL-0103	1977
Terrain Information (Report No. 9 in the ETL		
Series on Remote Sensing)		
Analysis of Multispectral Scanner Data for	AD 705 673	1970
Location of Sand and Gravel Deposits		
Analysis of Radar Calibration Data (Final)	AD 827 858L	1967
Analysis of Radar Calibration Data (Supplement)	AD 836 943L	1968
Analysis of SECOR Data — Vol. I	AD 865 488L	1968
Analysis of SECOR Data — Vol. II	AD 865 489L	1969
Analysis of the Max-Min Texture Measure, An	ETL-0280	1982
Analysis, Storage and Retrieval of Elevation	ETL-0179	1979
Data with Applications to Improve Penetration		
Analytic Aerotriangulation: Triplets and Sub-Blocks	AD 631 072	1965
Including Use of Auxiliary Data		
Analytical Aerial Triangulation	1510-TR	1958
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TITLE	REPORT NO.	YEAR
Analytical Aerial Triangulation Error Analysis and Application of Compensating Equations to the General Block Triangulation and Adjustment	AD 271 442	1961
Program (Interim) Analytical Aerial Triangulation Error Analysis and Application of Compensating Equations to the General Block Triangulation and Adjustment Program (Final)	AD 401-689	1962
Analytical Aerial Triangulation with Large  Computer (Analytical Simultaneous Block  Triangulation Technique)	34-TR	1966
Analytical Aerial Triangulation with Small Computer Analytical Aerotriangulation Using Triplets in Strips	13-TR AD 668 683	1963 1965
Analytical Photogrammetric Position System (APPS) Analytical Photogrammetric Position System (APPS) to Support the Field Army	ETL-TR-74-2 ETL-TR-74-4	1973 1974
An Investigation of Kernels for Shading of Elevation Data Apparent Temperature and Emissivity of Natural Surfaces at Microwave Frequencies	TEC-0059 AD 872 878L	1995 1970
Appendix III Narrative Report for Geoscience Overlays	ETL-0330	1968 1983
Application of a Feature Selection Technique to Samples of High Resolution Synthetic Aperture Radar Imagery	E1E-0550	1957
Application of a Phase Comparison Radiolocation System to Distance and Position Measurement over Mountainous and Desert Terrain		
Application of Artificial Intelligence to Radar Image Understanding Application of Biorthogonal Filter Functions to	ETL-0387 ETL-0222	1985 1980
Pattern Recognition and Feature Extraction Application of Coriolis Force to Geodetic Measurements	AD 477 136	1965
Application of Hierarchical Data Structures to Geographical Information Systems Application of Hierarchical Data Structures to	ETL-0301 ETL-0337	1982 1983
Geographical Information Systems (Phase II)  Application of Hierarchical Data Structures to  Geographical Information Systems (Phase III)	ETL-0376	1984
Application of Hierarchical Data Structures to Geographical Information Systems (Phase IV)	ETL-0411 AD 805 156	1985 1966
Application of Inertial Techniques to Surveying Application of Image Sensing Arrays to Metrology, Detection and Instrumentation	ETL-CR-71-6	1970

TITLE	REPORT NO.	YEAR
Application of Image Sensing Arrays to Metrology,	ETL-CR-72-5	1972
Detection and Instrumentation Application of Image Sensing Arrays to Metrology,	ETL-CR-74-9	1974
Detection and Mapping, Interim Application of LORAC to Precision Terrestrial Line- Length Measurement and Position Fixing	AD 232 015	no date
Application of Scalar Renormalization to the Scattering of Electromagnetic Waves from a	ETL-0020	1975
Three-Dimensionally Inhomogeneous Medium with Strong Dielectric Fluctuations	A TO 400 20 AT	1062
Applications of Advanced Accelerometers to Surveying and Geodesy I	AD 429 324L	1963 1964
Applications of Advanced Accelerometers to Surveying and Geodesy II	AD 439 969L	
Applying Photogrammetry to Real Time Collection of Digital Image Data	ETL-0275	1981
Approach to Model Formation Based on Formal	PWI 0402	1988
Geometric Reasoning, An	ETL-0493 AD 722 787	1968
Approach to the Evaluation of Strategies in Insurgency, An		
APPS-IV Civil Works Data Extraction/Data Base Application Study (Phase I)	ETL-0310	1982
APPS-IV Civil Works Data Extraction/Data Base Application Study (Phase II)	ETL-0336	1983
APPS-IV Remote Sensing Applications Guide	ETL-0333	1983
ARK-1 Gyro Aiming Circle (Wild Heerbrugg Instruments, Inc.)	49-TR	1969
ARMIDOP/ZERO-DOP Positioning Technique	ETL-RN-71-2	1971
Army Tactical Terrain Data Requirements Forecast (FY87-FY93)	ETL-SR-1	1987
Army Terrain Information System ARPA Unmanned Ground Vehicle Stereo Vision Program	ETL-0050	1976
at Teleos Research: Annual Report	TEC-0034	1993
ARPA Unmanned Ground Vehicle Stereo Vision Program	TEC-0052	1994
Artifact Removal in Frequency Domain Compressed Imagery	ETL-0233	1980
Artillery Survey System, Phase 1— Study of Methods	AD 883 288L	1958
Aspects and Methods of Nonisotropic Land Navigation Error Control Including	ETL-RN-71-4	1971
Consideration of Topography Assessment of Inertial Technology for Gravity	ETL-0291-1	1982
Survey Applications Assessment of Means for Determining Deflection of the Vertical	ETL-0303	1982
Assessment of the Horizontal Accuracy of Interim Terrain Data, An	TEC-0081	1996

TITLE	REPORT NO.	YEAR
Assistant for Science and Technology Analyst (ASTA)	ETL-0570	1990
Associative Array Processing of Raster Scanned	ETL-0046	1976
Data for Automated Cartography		
Associative Array Processing of Raster Scanned	ETL-0132	1977
Data for Automated Cartography II (Improved		
Resolution and Data Handling)		
Associative Array Processing for Topographic	ETL-CR-74-1	1974
Data Reduction		
Associative Array Processing for Topographic	ETL-CR-74-20	1974
Data Reduction, Final Report		
Astrogeodetic-Inertial Methods for Vertical	ETL-0414	1985
Deflection Determination		
Astronomical Attachment Azimuth Determination,	1374-TR	1954
Reflecting, for Transit or Theodolite		****
ATF-Hadego Photocompositor Photolettering Machine	1414-TR	1955
Atmospheric Refraction	TR-61-505	no date
Atmospheric Refraction for Satellite Photography	56-8B-1	1962
Autocorrelation of Control Points on 11-Band	ETL-0473	1987
Multispectral Imagery		
Autonomous Land Vehicle (ALV) Program - Seventh	TITT 0406	1000
Quarterly Report, The	ETL-0496	1988
Approach to Model Formation Based on	ETL-0527	1989
Formal Geometric Reasoning, Second		
Annual Report, An	WEG 0012	1000
Automated Classification of Basic-Level Terrain	TEC-0013	1992
Features in Digital Elevation Models	ETL-0567	1990
Automated Extraction of Airport Runway Patterns	E1L-0307	1990
From Radar Imagery	ETL-0517	1988
Automated Feature Attribute Accessing From	E1L-0517	1700
Map Text	ETL-0459	1987
Automated Industrial Feature Extraction from	E1L*0433	1707
Synthetic Aperture Radar Imagery	ETL-0114	1977
Automated Processing of Geographic Information	EIL-VII4	17//
in Image Data Forms	ETL-0480	1987
Automated Route Finder for Multiple Tank Columns	ETL-0574	1990
Automated SAR Change Detection for Combat Support	E1E-0374	1770
Phase I	ETL-0554	1990
Automated Segmentation and Extraction of Area	E1E-0554	1770
Terrain Features From Radar Imagery	ETL-0584	1991
Automated Software System for Updating Digital	EIE OUT	
Terrain Databases From All-Source Imagery,		
Phase I SBIR	ETL-0012	1975
Automated Technique for Measuring Built-Up Urban Areas from Map Graphics through Analog Image		• -
Processing	ETL-ETR-71-2	1971
Automatic Contour Digitizer (ACD)		· <del>-</del>

Automatic Control of Digital Stereo Correlation	TITLE	REPORT NO.	YEAR
Automatic Control of Digital Stereo Correlation Methods Automatic Correlation of USGS Digital Line Graph Geographic Features to GNIS Names Data Automatic Correlation of USGS Digital Line Graph Geographic Features to GNIS Names Data Automatic Celectro Optical Satellite Triangulation System Automatic Feature Extraction/Algorithm Testing Automatic Feature Extraction: An Annotated Bibliography Automatic Feature Extraction From Aerial Imagery of Urban Areas Through Knowledge- Based Image Analysis Automatic Ine Network Extraction From Aerial Imagery of Urban Areas Through Knowledge- Based Image Analysis Automatic Map Compilation System Automatic Point Marking Measuring and Recording Instrument Automatic Point Transfer Instrument Automatic Point Transfer Instrument Automatic Seesau Measuring Equipment (ARME) ETIL-0099 1976 Automatic Stereo Perception of Aerial Photography by Means of Optical Correlation Automatic Radar Feature Extraction System Using Descriptors Automatic Type/Symbol-Placement Developments Automatic Type/Symbol-Placement Developments Automatic Type/Symbol-Placement Developments Automation of Airborne Profile Recorder Data Reduction (Interim) Automation of Airborne Profile Recorder Data Reduction (Interim) Automation of Airborne Profile Recorder Data Reduction (Interim) Automation System Using Descriptors Automation System ETIL-0375 1984 Technology Development Automomous Land Vehicle (ALV) Planning and Navigation System Autonomous Land Vehicle (ALV) Program Phase II- First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II- First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II- Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program, Finth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Finth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Finth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehic	Automotic Contouring Instrumentation	1488-TR	1957
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Automatic Correlation of USGS Digital Line Graph Geographic Features to GNIS Names Data Automatic-electro Optical Satellite Triangulation System Automatic Feature Extraction/Algorithm Testing Automatic Feature Extraction: An Annotated Bibliography Automatic Feature Extraction: An Annotated Bibliography Automatic Line Network Extraction From Aerial Imagery of Urban Areas Through Knowledge- Based Image Analysis Automatic Map Compilation System Automatic Point Marking Measuring and Recording Instrument Automatic Point Transfer Instrument Automatic Reseau Measuring Equipment (ARME) Automatic Stereo Perception of Aerial Photography by Means of Optical Correlation Automatic Stereo Perception of Aerial Photography by Means of Optical Correlation Automatic Radar Feature Extraction System Using Descriptors Automatic Type/Symbol-Placement Developments Automatic Type/Symbol-Placement Developments Automatic of Airborne Profile Recorder Data Reduction (Interim) Automation of Airborne Profile Recorder Data Reduction (Final) Autonation of Airborne Profile Recorder Data Reduction (Final) Autonation Stand Vehicle (ALV) Planning and Navigation System Autonamous Land Vehicle (ALV) Program Phase II- First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II- Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Firth Quarterly Report, The Autonomous Land Vehicl			
Geographic Features to GNIS Names Data		ETL-0426	1986
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Reduction (Final) Autonomous Ground Vehicles: Control System Technology Development Autonomous Land Vehicle Autonomous Land Vehicle (ALV) Planning and Navigation System Autonomous Land Vehicle (ALV) Program Phase II - First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle 1st Quarterly Report, The Autonomous Land Vehicle 2nd Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Third Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth	Reduction (Interim)	AT 005 545T	1067
Autonomous Ground Vehicles: Control System Technology Development Autonomous Land Vehicle Autonomous Land Vehicle (ALV) Planning and Navigation System Autonomous Land Vehicle (ALV) Program Phase II - First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle 1st Quarterly Report, The Autonomous Land Vehicle 2nd Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Third Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468 1987  ETL-0468 1987		AD 823 343L	1907
Technology Development Autonomous Land Vehicle (ALV) Planning and ETL-0413 1986 Autonomous Land Vehicle (ALV) Planning and ETL-0465 1987 Navigation System Autonomous Land Vehicle (ALV) Program Phase II - First Quarterly Scientific and Technical Report, The ETL-0515 1988 Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The ETL-0526 1988 Autonomous Land Vehicle 1st Quarterly Report, The ETL-0430 1986 Autonomous Land Vehicle 2nd Quarterly Report, The ETL-0436 1986 Autonomous Land Vehicle (ALV) Program, Third ETL-0450 1986 Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth ETL-0460 1987 Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth ETL-0483 1987		ETI 0275	1984
Autonomous Land Vehicle (ALV) Planning and ETL-0465 1987  Navigation System  Autonomous Land Vehicle (ALV) Program Phase II - First Quarterly Scientific and Technical Report, The ETL-0515 1988  Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The ETL-0526 1988  Autonomous Land Vehicle 1st Quarterly Report, The ETL-0430 1986  Autonomous Land Vehicle 2nd Quarterly Report, The ETL-0436 1986  Autonomous Land Vehicle (ALV) Program, Third ETL-0450 1986  Autonomous Land Vehicle (ALV) Program, Third ETL-0450 1986  Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth ETL-0460 1987  Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth ETL-0483 1987		E1L*03/3	1704
Autonomous Land Vehicle (ALV) Planning and Navigation System  Autonomous Land Vehicle (ALV) Program Phase II - First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle 1st Quarterly Report, The Autonomous Land Vehicle 2nd Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Third Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468  1987  ETL-0468  1987		ETI -0413	1986
Autonomous Land Vehicle (ALV) Program Phase II - First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle 1st Quarterly Report, The ETL-0526 Autonomous Land Vehicle 2nd Quarterly Report, The ETL-0430 ETL-0430 1986 Autonomous Land Vehicle (ALV) Program, Third Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468 1987  ETL-0468 1987	Autonomous Land Vehicle		
Autonomous Land Vehicle (ALV) Program Phase II - First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle 1st Quarterly Report, The Autonomous Land Vehicle 2nd Quarterly Report, The ETL-0430 Autonomous Land Vehicle 2nd Quarterly Report, The ETL-0436 Autonomous Land Vehicle (ALV) Program, Third Cuarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Cuarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Cuarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth ETL-0468  ETL-0468  1987  Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0483  1987		E1D-0403	1,0,
First Quarterly Scientific and Technical Report, The Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle 1st Quarterly Report, The Autonomous Land Vehicle 2nd Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Third Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth ETL-0460 1987 Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth ETL-0468 1987 Autonomous Land Vehicle (ALV) Program, Sixth ETL-0483	Navigation System		
Autonomous Land Vehicle (ALV) Program Phase II - Second Quarterly Scientific and Technical Report, The Autonomous Land Vehicle 1st Quarterly Report, The Autonomous Land Vehicle 2nd Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Third Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth ETL-0468 1987  Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0483	Autonomous Land Venicle (ALV) Program Flase II -	ETL-0515	1988
Second Quarterly Scientific and Technical Report, The  Autonomous Land Vehicle 1st Quarterly Report, The  Autonomous Land Vehicle 2nd Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Third  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Fourth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468  1987	First Quarterly Scientific and Technical Report, The		
Autonomous Land Vehicle 1st Quarterly Report, The Autonomous Land Vehicle 2nd Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Third Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth ETL-0468 1987 Autonomous Land Vehicle (ALV) Program, Sixth ETL-0483	Autonomous Land Venicle (ALV) Flogram Flast in	ETL-0526	1988
Autonomous Land Vehicle 2nd Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Third  Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth  Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468  1987	A Assessment and Vehicle 1st Operarly Report. The		1986
Autonomous Land Vehicle (ALV) Program, Third  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Fourth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0483  1987	Autonomous Land Vehicle 2nd Quarterly Report, The	ETL-0436	1986
Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468  ETL-0468  1987	Autonomous Land Vehicle (ALV) Program Third	ETL-0450	1986
Autonomous Land Vehicle (ALV) Program, Fourth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468  1987  ETL-0483  1987	Operatory Penort The		
Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Fifth Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468  ETL-0483  1987	Autonomous Land Vehicle (ALV) Program Fourth	ETL-0460	1987
Autonomous Land Vehicle (ALV) Program, Fifth  Quarterly Report, The  Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0468  ETL-0468  1987			
Quarterly Report, The Autonomous Land Vehicle (ALV) Program, Sixth  ETL-0483  1987	Autonomous I and Vehicle (ALV) Program, Fifth	ETL-0468	1987
Autonomous Land Vehicle (ALV) Program, Sixth E1L-0483	Quarterly Report. The		
	Autonomous Land Vehicle (ALV) Program, Sixth	ETL-0483	1987
Quarterly report, the	Quarterly Report, The		

TITLE	REPORT NO.	YEAR
Autonomous Land Vehicle (ALV) Program, Seventh  Quarterly Report, The	ETL-0496	1988
Autonomous Land Vehicle (ALV) Program Phase I, Final Report	ETL-0506	1988
Autonomous Land Vehicle (ALV) Planning and Navigation, Second Annual Report	ETL-0511	1988
Autonomous Land Vehicle (ALV) Planning and Navigation System, Final Annual Report	ETL-0539	1989
Background Study and Selection Criteria Analysis of MIL-STD-810C: Environmental Test Methods	ETL-0154	1978
Backscattering of Electromagnetic Waves from a Slightly Rough Surface with a Lossy Layer	ETL-TR-74-10	1974
Backscattering of Electromagnetic Waves from a Surface Composed of Two Types of Surface Roughness	ETL-TR-71-4	1971
Backscattering of Radar Waves by Vegetated Terrain	ETL-0105	1977
Backscattering of Radar Waves from a Tilted, Slightly Rough Surface	ETL-0124	1977
Base Plant Correlator	ETL-CR-71-15	1971
Base Plant Correlator (Final)	ETL-CR-73-3	1973
Basic Factors Limiting the Accuracy of Mapping and Aerotriangulation by Photogrammetric Procedures	AD 77 390	1955
Battlefield Assessment and Decision Assistance System Using Neural Networks and an Expert System Director	TEC-0002	1992
Bayesian Approach to Identification of a Remotely Sensed Environment	AD 860 060	1969
Bibliographic Literature Search Concerning the Relationship Between Soils and Plants in Arid and Semi Arid Regions in North America	ETL-0171	1978
Bibliography and Abstracts of Analytical Photogrammetry	1487-TR	1957
Bibliography of In-House and Contract Reports	ETL-SR-70-1	1970
Bibliography of In-House and Contract Reports, Supplement 1	ETL-SR-71-3	1971
Bibliography of In-House and Contract Reports, Supplement 2	ETL-SR-72-3	1972
Bibliography of In-House and Contract Reports, Supplement 3	ETL-0013	1975
Bibliography of In-House and Contract Reports, Supplement 4	ETL-0042	1976

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Bibliography of In-House and Contract Reports, Supplement 5	ETL-0104	1977
Bibliography of In-House and Contract Reports, Supplement 6	ETL-0143	1978
Bibliography of In-House and Contract Reports, Supplement 7	ETL-0180	1979
Bibliography of In-House and Contract Reports, Supplement 8	ETL-0216	1980
Bibliography of In-House and Contract Reports, Supplement 9	ETL-0255	1981
Bibliography of In-House and Contract Reports, Supplement 10	ETL-0282	1982
Bibliography of In-House and Contract Reports, Supplement 11	ETL-0320	1983
Bibliography of In-House and Contract Reports, Supplement 12	ETL-0353	1984
Bibliography of In-House and Contract Reports, Supplement 13	ETL-0395	1985
Bibliography of In-House and Contract Reports, Supplement 14	ETL-0434	1986
Bibliography of In-House and Contract Reports, Supplement 15	ETL-0500	1988
Bibliography of In-House and Contract Reports, Supplement 16	ETL-0550	1989
Bibliography of In-House and Contract Reports, Supplement 17	ETL-0575	1991
Bibliography of In-House and Contract Reports, Supplement 18	TEC-0023	1992
Bibliography of In-House and Contract Reports, Supplement 19	TEC-0058	1994
Bibliography of In-House and Contract Reports, Supplement 20	TEC-0087	1996 1988
Bibliography on the Chemical Weathering of Granitic Rocks, A	ETL-0505	1900
Bimodal Display	ETL-0110 ETL-0412	1985
Blue Laser	TEC-0019	1991
Brigade-Level Hard Copy Device Broad-Spectrum Electromagnetic Spectrum	AD 878 341L	1970
Backscatter		
Brush Surfaced Lithographic Press Plates	1452-TR	1956
Building a 3-D World Model for a Mobile Robot	ETL-0490	1988
from Sensory Data Built-Up Area Feature Extraction: First Year	ETL-0561	1990
Report Built-Up Area Feature Extraction: Second Year Tackwise Progress Report	ETL-0562	1990
Technical Progress Report		

TITLE	REPORT NO.	YEAR
Built-Up Area Feature Extraction: Final Report	TEC-0016	1991
Camera Calibration Study	TITT 0001	no date
Capabilities of Remote Sensors to Determine	ETL-0081	1976
Environmental Information for Combat	AD 882 789L	1964
Cartographic Application of Conflex I Cartographic Design Standards — A Preliminary	AD 002 707L	1967
Investigation		2507
Cartographic Drafting Methods and Equipment	1305-TR	1953
Cartographic Drafting Methods and Equipment	1339-TR	1954
(Plastic Scribing Process)		
Second Interim Report		
Cartographic Electron Beam Recorder (EBR) System	ETL-0111	1977
Cartographic Electron Beam Scanner Design Study	ETL-0257	1981
Cartographic Scanner Plotter	ETL-CR-72-12	1972 1966
Change Detector Maintenance Instructions		1965
Change Detector Operation Manual		1961
Change Detector Studies Characterization and Optimization of an	ETL-CR-74-18	1974
Electro-Optic Imaging Device for Real-Time	212 011	
Map Profiling		
Characterization of the PROM for Coherent	ETL-0053	1976
Optical Processing Applications		
Charging Equipment, Mobile (CEM)	ETL-0089	1976
Chemical Array Studies	ETL-0130	1977
Circularly Polarized Measurements of Radar	ETL-0199	1980
Backscatter from Terrain	PTI 0004	1980
Circularly Polarized Measurements of Radar	ETL-0234	1980
Backscatter from Terrain and Snow Covered		
Terrain	ETL-0317	1983
Circumpolar Method for Determining Azimuth Classification and World Distribution of	ETL-0317 ETL-SR-74-4	1973
Vegetation Relative to V/STOL Aircraft		
Operations		
Classification of Cartographic Features	ETL-0290	1982
Through Walsh Transforms		
Classification of Metamorphic Rocks and	ETL-0341	1983
Their Applications to Air Photo		
Interpretation Procedures, The	TOTEL 0.4.40	1006
Classification of Selected Radar Imagery	ETL-0442	1986
Patterns Using a Binary Tree Classifier		
Climatic Information for Application in Designing	ETL-0474	1987
and Testing U.S. Army Materiel	ETL-0474 ETL-0466	1987
CMU (Carnegie-Mellon University) Strategic Computing	D1D-0400	1707
Vision Project Report: 1984 to 1985		

TITLE	REPORT NO.	YEAR
Coated Paper and Developer for Continuous  Tone Electrophotography	AD 674 241	1968
Cold Weather Testing of 10-Second Direction Theodolite, 1-Minute Direction Theodolite (Foreign Model), Astronomical Attachment, and Winterization Kit	1288-TR	1953
Color Contact Printer Mark III	ETL-ETR-70-9	1970
Color Ink-Jet Demonstration Program	ETL-0196	1979
Color Orthophotomaps	ETL-ETR-72-2	1972
Color Separation System Evaluation	AD 672 078	1968
Combination Map Reproduction Van Body	1536-TR	1958
Combined Engineering and Service Tests of the Copy and Supply Van Section of the Motorized Photomapping Train	1444-TR	1956
Combined Engineering and Service Tests of the  Map Revision Van Section of the Motorized Photomapping Train	1447-TR	1956
Combined Engineering and Service Tests of the Multiplex Van Section of the Motorized Photomapping Train	1520-TR	1958
Combined Engineering and Service Tests of the Photomapping Van Section of the Motorized Photomapping Train	1428-TR	1955
Combined Engineering and Service Tests of the Rectifier Van Section of the Motorized	1544-TR	1958
Photomapping Train Comparative Aerotriangulation Tests of the Multiplex Kelsh Plotter, Stereoplanigraph, Wild Autograph Model A-5, and Wild Stereoplotter Model A-6	1349-TR	1954
Comparative Study of Photography for Soils and Terrain Data	38-TR	1968
Comparison of Air Photo Landform Units to Statistically Defined Groups of Tors in Dartmoor, Southwest England	TEC-0001	1992
Comparison of Air Photo Lineations and Joint Patterns,  Dartmoor, Southwest England	TEC-0006	1992
Comparison of Soils from Twentynine Palms, CA and Saudi Arabia, A	ETL-0583	1991
Comprehensive Summary of Project Trend	ETL-0041	1975
Computer-Assisted Likely Minesite Prediction  Model and Estimated Electromagnetic and  Thermal Soil Properties	ETL-0391	1985
Computer Automated Image Classification	TEC-0074	1995

TITLE	REPORT NO.	YEAR
Computer for Army Artillery Inertial Survey System (GEISHA)	AD 814 052	1963
Computer Generation of Fractal Terrains	ETL-0504	1988
Computer Program to Simulate Scenario Functions	ETL-0025	1975
Computer Strategy for Detecting Line Features	ETL-0478	1988
on Simulated Binary Arrays in Support of Radar Feature Extraction		
Computing a Line-of-Sight Using Digital Image	ETL-0027	1975
Matching and Analytical Photogrammetry		
Consensus Theory in Expert Systems: An Adaptive	ETL-0524	1988
Inference Framework and Application to Image Understanding		
Concept Development of Automated Image Analysis	ETL-0194	1979
Concept Development of Automatic Instrumentation	ETL-0187	1979
for Monitoring Movement of Dams		
Concept for an Ultraprecise Geodetic Baseline	RN-24	1967
Conifer Tree Influence on Digital Terrain Elevation		
Data (DTED): A Case Study at Dulles International		1000
Airport	TEC-0038	1993
CONPLOT I — A Contour Generating Program	ETL-CR-70-2	1970
CONPLOT II — A Contour Generating Program	ETL-CR-71-1 ETL-CR-73-20	1971 1973
CONRAD — A Program to Contour Radar Data	AD 673 881	1973
Continuous-Tone Electrophotography	ETL-0228	1980
Contour Digitizing and Tagging Software (CONTAGRID)		
Contour-to-Grid Interpolation with Nonlinear Finite Elements: A Feasibility Study	ETL-0472	1987
Contribution to the Philosophy of Climatic  Design Limits for Army Materiel: Extreme	ETL-TR-72-5	1972
Hot-Desert Conditions		1060
Control Unit for Army Artillery Inertial Survey System (GEISHA)	AD 814 068	1968
Controlled Color for Contact Printing Aerial Imagery	ETL-TR-72-4	1972
Conversion of the CALAP Program from FORTRAN to DUCK. Final Report	ETL-0419	1986
Cooperative Autonomous Agents Testbed - First Annual Report	ETL-0571	1990
Cooperative Autonomous Agents Testbed - Second		
Annual Report	TEC-0051	1993
Coordinate Measurement Research: Basic and	ETL-CR-72-14	1972
Applied Experiments with the Negative-		
Reticle Concept		
Corona Study Relevant to Electrostatic	ETL-CR-71-22	1971
Printing Process		

TITLE	REPORT NO.	YEAR
Corps of Engineers Maintenance Package for Inertial Survey Equipment	AD 847 498	1963
Correlation of Noisy Images	ETL-0230	1980
Cultural Data Base Implementation Study and	ETL-0380	1984
Computer-Aided Scene Modeling System Users  Manual		
Cumulative Probability Tables for Testing	ETL-0418	1986
Consensus in Ranking Experiments		
Data Base Sizing Methodology Applied to	ETL-0150	1978
the Army Terrain Information System (ARTINS)	TOTAL 00.55	1002
Data Integrity Factors Affecting the Construction	ETL-0357	1983
of the Mapping, Charting, and Geodesy Data Base		10.50
Data Weighing Analysis	AD 672 101	1968
Decision Aid for Integrated Air Defense Planning	TEC-0060	1994
Decision Path Approach to Guidance for Climatic	ETL-0183	1979
Environmental Test Planning (MIL-STD-810C)		
Defense Mapping Agency Advanced Raster-to-Vector Benchmark Testing	ETL-0420	1986
Defense Mapping Agency (DMA) Raster-to-Vector Analysis	ETL-0383	1984
Defense Mapping Agency (DMA) Raster-to-Vector Analysis — Appendix	ETL-0383A	1984
Defense Mapping Agency (DMA) Raster-to-Vector	ETL-0384	1984
Benchmark Testing	ETL-0157	1978
Delta Pulse Code Modulation Compression	E1E-0157	1770
Relative to Stereo Image Matching	ETL-0023	1975
Demonstration and Evaluation of the Utilization of Side-Looking Airborne Radar for Military	E1E-0023	17,0
Terrain Analysis	ETL-RN-71-3	1971
Derivation and Potential of New Filter	E1E-R(4-71-3	17/1
Equations for Numerical Weather Prediction	AD 701 124	1969
Description of Instrumentation Data Analysis and	AD 701 124	1707
Reduction for an Atmospheric Seeing Monitor	ETL-0240	1980
Design and Analysis of a High-Production Mini-	E1E-0240	1700
Computer System for Regridding Digital		
Terrain Elevation Matrices	ETL-CR-71-18	1971
Design and Development of a Position and	L1L-CR-71-16	17/1
Azimuth Determining System (PADS)	ETL-0032	1975
Design and Development of an Advanced	E1L-0032	1973
Electron Beam Control System	ETL-CR-71-5A	1971
Design and Development of Power Package for	E1L-CR-/1-3A	17/1
Surveying Instrument: Azimuth, Gyro, Lightweight		

TITLE	REPORT NO.	YEAR
Design and Development of Surveying	ETL-CR-71-5	1971
Instrument: Azimuth, Gyro, Lightweight		
(SIAGL)		
Design and Fabrication of a 70 Millimeter Inter-	ETL-CR-71-8	1971
ference Imaging System		
Design and Fabrication of an Experimental	ETL-CR-71-28	1971
Multiband Camera	TOTAL 0.1.40	1000
Design and Feasibility Study of an Off-Line	ETL-0149	1978
Digital Orthoprinter for Field Use	7777 A1AA	1055
Design and Feasibility Study of HOC as a	ETL-0109	1977
Van Mounted Stereo Model Digitizer	TOTAL CON 520 C	1072
Design, Fabrication, and Test of a Position	ETL-CR-73-6	1973
and Azimuth Determining System (PADS)	TETT 02/2	1004
Design Issues in Video Disc Map Display	ETL-0362 ETL-0276	1984 19 <b>7</b> 9
Design, Modification, Fabrication, and Test	E1L-02/6	19/9
of a Prototype Miniaturized North		
Reference Unit (MINRU)	AD 463 012L	1965
Design of a Laser Experiment for the  Verification of the Inverse Scattering Theory	AD 403 012L	1703
Design of a Map Update Capability for	ETL-0107	1977
Engineer Topographic Units	DID OIO,	22
Design of an Experimental Program for	ETL-0182	1979
Evaluation of LBR Systems		
Design of Engineering Test Model,		
Topographic Data System		
Volume 1	AD 270 216L	1961
Volume 2	AD 270 205L	1961
Volume 3	AD 270 207L	1961
Volume 4	AD 270 210L	1961
Volume 5	AD 270 209L	1961
Design Studies and Prototype Model Development	ETL-CR-70-4	1970
of a Small North Orienting Device		
(Miniaturized Gyrocompass)		
Design Study of a Large Format Printer (LFP)	ETL-0368	1984
Desk Model Fotosetter Photo-Lettering Machine	1329-TR	
1953		
Detecting Line-Road and Road-Intersection	ETL-0274	1981
Patterns at Various Angles	TOT 51 CD 10	1051
Determination of Height Differences from	ETL-71-CR-10	1971
Gravity and Gravity Gradients	DOT DIE 4 4	1074
Determination of Level Sensitivity (Field	ETL-RN-74-4	1974
Calibration with the Level on the Instrument)	ETI DN 72 2	1072
Determination of the Anomalous Gravity Potential	ETL-RN-73-2	1973
from Satellite and Terrestrial Data Under		
Utilization of Modern Gravimetric Theory		

TITLE	REPORT NO.	YEAR
Determination of the Geometrical Quality of	RN-3	1962
Comparators for Image Coordinate		
Measurements		
Determinations and Statistical Studies of	ETL-CR-74-8	1973
Gravimetric Deflections		
Determinations and Statistical Studies of	ETL-0017	1975
Gravimetric Deflections, Final Report		
Determinations of Direct and Inverse Azimuths,	RN-19	1967
Zenith Distance, Hour Angle, Declination		
and Distance Between Two Points on Normal		
Sections		
Determining an Azimuth with a Gyrotheodolite	ETL-0440	1986
Determining the Translation of a Rigidly Moving	ETL-0475	1986
Surface, Without Correspondence		
Developing a Data Base for Predicting	ETL-0015	1975
Soviet Tactical Behavior		
Development of a High Precision Capability for	ETL-0121	1977
Monitoring Structural Movements of Locks		
and Dams		
Development of an Integrated Mobile Robot System	ETL-0546	1989
at Carnegie Mellon University		
Development of an Integrated Mobile Robot System	ETL-0565	1990
at Carnegie Mellon University		
Development of a Prototype Family of Military	ETL-ETR-70-7	1970
Geographic Intelligence Products to Support		
Airmobile Operations		
Development of a Small North Orienting Device	AD 869 896L	1970
Development of a Statistical Method for Three		
Dimensional Terrain Elevation Error Analysis	TEC-0030	1991
Development of a Terrain Profile Recorder	AD 649 830	1967
Image Point Transfer Instrument		
Development of Automatic Names Placement Software	ETL-0484	1987
Development of a Variscale Stereo Point	AD 643 722	1966
Marking Instrument		1065
Development of an Evaluation Model-Change		1965
Detector		1050
Development of an Experimental Family of	ETL-TR-72-3	1972
Military Geographic Intelligence (MGI)		
Products to Support Battlefield Sensor		
Activities		
Development of an Integrated Mobile Robot System	ETL-0565	1990
at Carnegie Mellon University	TITT 0545	1000
Development of an Integrated Mobile Robot System	ETL-0546	1989
at Carnegie Mellon University	TOTAL 0.5.0.0	1000
Development of an Integrated Mobile Robot System	ETL-0508	1988
at CMU, June 1987 Annual Report		

TITLE	REPORT NO.	YEAR
Development of a Statistical Method for Three-Dimensional		
Terrain Elevation Error Analysis, Phase II	TEC-0066	1995
Development of Computer Vision Techniques for	ETL-0451	1987
Automatic Feature Extraction		
Development of Descriptor Sets for the	ETL-0369	1984
Unambiguous Characterization of Geographic		
Features on SAR Imagery		
Development of Electronic Control of a	ETL-0397	1985
Superconducting Gravity Gradiometer		
Development of Electronic Control of a Super-	ETL-0447	1986
conducting Gravity Gradiometer — Phase II		
Development of Finite Element Models for the	ETL-0096	1977
Earth's Gravity Field Phase I: Macro Gravity		
Model for Satellite Orbit Integration		
Development of Finite Element Models for the	ETL-0097	1977
Earth's Gravity Field Phase II: Fine	•.	
Structure Disturbance Gravity Representations		
Development of Height Finder Oblique,	1383-TR	1954
Topographic		
Development of High Speed CRT Print Head Systems	ETL-0213	1980
for Cartographic Applications		
Development of Improved Area Correlation	ETL-CR-73-19	1973
Techniques		
Development of Lightweight Long-Range Survey	AD 477 042	1965
System (LRSS)		
Development of Spherical Map Sections and	1440-TR	1956
Transparent Conforming Overlays		
Development, Service Tests, and Production Model	1307-TR	1953
Tests, Autofocusing Rectifier		
Development, Test, Preparation, Delivery, and	ETL-1307	1982
Installation of Algorithms for Optimal		
Adjustment of Inertial Survey Data		
Developmental Optical Correlator	ETL-0033	1975
DFAD PLUS System Development	TEC-0031	1992
Digest of High Temperature Storage Literature	ETL-0152	1978
Digital Automatic Map Compilation System	AD 285 258	1962
Digital Cartographic Study and Benchmark	ETL-0168	1978
Digital Cartographic Study and Benchmark —	ETL-0090	1975
First Interim Technical Report		1055
Digital Cartographic Study and Benchmark —	ETL-0091	1975
Second Interim Technical Report		1056
Digital Cartographic Study and Benchmark —	ETL-0092	1976
Third Interim Technical Report		
Digital Cartographic Study and Benchmark —	ETL-0093	1977
Fourth Interim Technical Report		

TITLE	REPORT NO.	YEAR
Digital Computer Program for the Solution of	AD 711 858	1961
a Photogrammetric Net (Preparation of Maps		
from Aerial Photographs)		
Digital Data Editing System	ETL-0146	1977
Digital Data to Pressplate Study	ETL-0044	1976
Digital Image Manipulation and Enhancement	ETL-CR-73-7	1973
System (DIMES) User's Handbook		
Digital Laser Platemaker Modifications	ETL-0379	1984
Digital Map Color Proofing Methodologies	ETL-0372	1984
Evaluation, Final Report		
Digital Map Color Proofing Methodologies	ETL-0373	1984
Evaluation, Final Report (Proprietary)		
Digital Mapping Glossary	AD A782 328	1974
Digital Mapping System Concepts Study	ETL-CR-71-26	1971
Digital Mapping System: Mathematical Processing	ETL-CR-74-6	1974
Digital Mapping System Study	ETL-CR-71-25	1971
Digital Multicolor Recorders and Scanner	ETL-0551	1989
The Technology and the Equipment		
Digital Planimetric Compiler	ETL-ETR-72-1	1972
Digital Pre-Press System Design Study	ETL-0339	1983
Digital Radar Restitution	AD 448 230L	1964
Digital Rectification of Side-Looking Radar	ETL-CR-73-18	1973
(DRESLR)		
Digital Simulation of a Radar Image of Pisgah	ETL-0019	1975
Crater Test Site, California		
Digital Terrain Analysis Module (DTAM)	TEC-0018	1991
Digital Terrain Data Compaction Using Array	ETL-0108	1976
Algebra		
Digital Terrain Elevation Data (DTED) Resolution		
and Requirements Study: Phase 2 Report	TEC-0035	1993
Digital Terrain Elevation Data Resolution and	ETL-SR-6	1990
Requirements Study - Interim Report		
Digital Terrain Elevation Model Analysis	ETL-0393	1985
Dimensionally Stable Opaque Cartographic Bases	1469-TR	1956
Direct Digital Color Proofing Technology Overview	ETL-0351	1984
Direct Electronic Transforms for Feature	ETL-0139	1978
Extraction		
Discrete Scattering Approach to Vegetation	ETL-0215	1980
Modeling		
Discrimination of Tropical Land Use in Puerto	ETL-CR-71-20	1971
Rico: An Analysis Using Multispectral Imagery	·	
Discrimination of Water from Shadow Regions on	ETL-0404	1985
Radar Imagery Using Computer Vision Techniques		
Display Technologies for Topographic Applications.	ETL-0016	1975
Assessment of State-of-the-Art and Forecast		
Upperparent of prate-of me-tar and a present		

TITLE	REPORT NO.	YEAR
DIS Terrain Data Format Study	TEC-0076	1995
Distribution of Mean Monthly Precipitation and	ETL-SR-72-5	1972
Rainfall Intensities		
Diurnal Freeze-Thaw Frequencies in Selected	ETL-0364	1984
Regions of the High Latitudes		
Domain-Dependent Reasoning for Visual Navigation	ETL-0445	1986
of Roadways		
Doppler Satellite for Army Field Operations	AD 470 472	1965
Doppler Translocation Test Program	41-TR	1968
Doppler Translocation Test Program	ETL-ETR-74-5	1974
Dynamic Image Interpretation for Autonomous	ETL-0437	1986
Vehicle Navigation		
Dynamic Image Interpretation for Autonomous	ETL-0516	1988
Vehicle Navigation, 1987 End of Year Technical Report		
Dynamic Image Interpretation for Autonomous	ETL-0549	1989
Vehicle Navigation - Final Report		
Venicie itavigation - i mai respect		
Earth's Gravitational Field from Observations	RN-30	1968
of Near-Earth Satellites and Terrestrial		
Gravity Measurements		
EBR Extension of Graphics Generator to	ETL-CR-74-12	1974
Include Symbols		
Edge Detection Experiment Using the MARR Operator, An	ETL-0435	1986
Effects of Soil Moisture and Vegetation on	ETL-0324	1983
Surface Temperature, The		
Effects of Supersonic and Hypersonic Aircraft	AD 226 577	1959
Speed upon Aerial Photography		
Effects of Supersonic and Hypersonic Aircraft	AD 248 726	1960
Speed upon Aerial Photography		
Effects of Supersonic and Hypersonic Aircraft		1960
Speed upon Aerial Photography, Final Report		
Effects of the Atmosphere on Aerial Photography	TN-70-1	1970
Electrofax Specifications for Army Five-Color	AD 841 828L	1968
Map Reproducing Equipment		
Electron Beam Recorder Applications Study	ETL-0120	1970
Electronic Angle-Measuring Device	ETL-TR-72-1	1972
Electronic Feedback Control of Mass-Spring	ETL-0398	1985
Systems		
Electronic Pointing Device (Microwave) System	AD 471 726L	1965
(Electrotransit)		
Electronic Printing Systems	ETL-0423	1986
Electronic Survey Equipment and Tests	AD-264 454	1960
Electro-Optical Image Processing with an Image	AD A836 685	1968
Storage Tube		
Electrophotographic Imaging Materials Evaluation	ETL-0266	1981
Electrostatic Paper and Toner Development		1969

TITLE	REPORT NO.	YEAR
Elevation Data Compaction by Polynomial Modeling	ETL-0140	1978
Elevation Data Edit Terminal	ETL-0328	1983
El Nino—Its Far Reaching Environmental Effects on		
Army Tactical Decision Aids	TEC-0080	1996
Empirical Surface Temperature Model, An	ETL-0503	1988
Emergency Target Location Function	21-TR	1965
End of Year Report for Parallel Vision Algorithm	ETL-0467	1987
Design and Implementation		
End of Year Technical Report: Dynamic Image Inter-	ETL-0463	1987
pretation for Autonomous Vehicle Navigation	. — <del>— — —</del> —	
pretation for Autonomous veincle travigation	35-TR	1966
Engineer Design Test and Evaluation of a	20 111	
Planimetric Compiler	12-TR	1963
Engineer Design Tests and Evaluation of a	12-110	1,00
Multipower Army Stereoscope	AD 486 337L	1966
Engineer Route Reconnaissance Feasibility Study	42-TR	1968
Engineer Test and Evaluation of the Command-	42-1K	1700
Retrieval Information System/Direct Input		
(CRIS/DI)	ETL-ETR-74-7	1975
Engineer Tests of 2.5 x Reduction Printer	16-TR	1963
Engineering Design Test Report: Inertial	10-1K	1703
Surveying Equipment (ISE)	2-TR	1961
Engineering Evaluation of Pulsed Xenon Light	2-1K	1701
Sources for Graphic Arts Use, An	5-TR	1962
Engineering Test Report: Elevation Meter, Ground		1963
Engineering Test Report: Lightweight Gyro	11-TR	1703
Azimuth Theodolite (Lear North-Seeking Gyro		
Model No. 11NG530A)	a mp	1062
Engineering Test Report of the Integrated	7-TR	1962
Mapping System	o CD	10/2
Engineering Test Report Short Range Electronic	9-TR	1963
Positioning Equipment (SREPE)	1646 TD	1960
Engineering Tests and Evaluation of a 9 by 18	1646-TR	1900
in Electronic Printer	1421 TD	1955
Engineering Tests and Evaluation of Multiplex	1431-TR	1933
Reduction Printer for Metrogon and		
Distortion-Free Photography	1.500 MD	1050
Engineering Tests and Evaluation of Printers	1538-TR	1958
for the Preparation of 9½- by 9½-inch		
Diapositives for the Precision Stereoplotter		1055
Engineering Tests and Evaluation of the Photo-	1497-TR	1957
grammetric Transforming Printer for 20°		
Convergent Photograph		
Engineering Tests of a Temperature-controlled	1599-TR	1959
Processing Unit, Deep-tank, for		
Photomechanical Film		
*		

TITLE	REPORT NO.	YEAR
Engineering Tests of Diapositive Processing Unit	1628-TR	1960
Engineering Tests of Interim Target Location	1498-TR	1957
Systems for Use in Controlled Areas		
Engineering Tests of Interim Target Location	1612-TR	1960
Systems for Use in Uncontrolled Areas		
Engineering Tests of Opaque Cartographic Bases	1290-TR	1953
Engineering Tests of Scanning Stereoscope	1491-TR	1957
Engineering Tests of the Cartographic Grid Ruler	1486-TR	1957
Engineering Tests of the Cartographic Van Section	1373-TR	1954
of the Motorized Photomapping Train		
Engineering Tests of the PPI Radar	1629-TR	1960
Presentation Restitutor		
Engineering Tests of Translucent Cartographic	1461-TR	1956
Bases		
Engineering Tests of Two Printer-Developers,	1292-TR	1953
Ammonia Process, 24 Inch		
Enhanced Photomap Evaluation Study	AD 651 396	1967
Enlarging Printer, 3x	ETL-0049	1976
Environmental Conditions Experienced by	ETL-CR-74-3	1973
Rockets and Missiles in Storage,		
Transit, and Operations		
Environmental Conditions Experienced by	ETL-CR-74-3-S	1973
Rockets and Missiles in Storage,		
Transit, and Operations, Supplement		
Environmental Conditions in a Tropical	ETL-0129	1974
Forest Region in Thailand		
Environmental Position Errors of the GPS —	ETL-0055	1976
Army User Equipment		
Equilibrium Figures and the Normal-spheroid		1968
of the Earth Mass-Functions and Isostasy		
Equipment and Techniques for the Utilization	1583-TR	1959
of Convergent Photography in Mapping		
Error-Free Compression of Digital Imagery	ETL-0079	1976
Error Propagation into Orbital Positions	ETL-CR-73-13	1973
Error Propagation in Two-Photo Intersection	ETL-RN-72-1	1972
Error Statistics for Astrogeodetic Positions	ETL-0267	1981
for an RGSS Test Course		
Errors in Automatic Pass Point Mensuration	ETL-0232	1980
Using Digital Techniques		
Establishment of an Ideal World Geodetic	AD 680 225	1968
System		
ETAK Navigator Modification Final Report	ETL-0569	1990
ETL 211-OD Gravitational Model, A Union	AD 502 044L	1968
Solution of Optical and Doppler Satellite		
Determinations		
Determinations		•

TITLE	REPORT NO.	YEAR
Evaluating Soil Moisture and Textural	ETL-0226	1980
Relationships Using Regression Analysis Evaluation and Comparison of Terrain	AD 845 338L	1968
Classification Methods (Type III)  Evaluation and Test of a Five-Color  Electrostatic Printing Machine for the	25-TR	1965
Reproduction of Topographic Maps and Charts Evaluation and Test of a Modified Plate Process Section, a Proposed New Photomechanical Process Section and a Redesigned Brush-	1560-TR	1959
Surfacing Machine Evaluation and Test of a Self-Contained	ETL-0167	1979
Vehicle Land Navigation System  Evaluation and Test of a Single-Color  Electrostatic Printing Machine for the	19-TR	1964
Reproduction of Topographic Maps and Charts Evaluation of a New Electrostatic Recording Medium	ETL-0102	1977
Evaluation of a Xerographic Process for Preparing Zinc Oxide-Silicone, Binder-Type	1545-TR	1958
Lithographic Plates Evaluation of Automatic Mapping APQ as a	31-TR	1966
Radar Mapping System  Evaluation of Coherent Radar Photography  Evaluation of Color Recognition Devices for  Making Color-Separations from Multicolor	18-TR 1401-TR	1963 1955
Maps and Charts Evaluation of Color Test Photography for Military Geographic Analysis: A Literature	ETL-TR-70-6	1970
Review Evaluation of Components for Some	AD 407 297L	1963
Elevation-Determining Systems Evaluation of Conventional Correlation Methods When Matching Infrared Imagery to	ETL-0195	1979
Panchromatic Imagery Evaluation of Experimental Xerographic Process	1417-TR	1955
for Lithographic Platemaking Evaluation of High Precision SHORAN-Controlled	1484-TR	1957
Photography Evaluation of Land Use Techniques for	AD 817 124L	1967
Processing MGI  Evaluation of Multiband and Color Aerial Photography for Selected Military Geographic Intelligence in a Subtropical Desert Environment	54-TR	1970

TITLE	REPORT NO.	YEAR
Evaluation of Offset Collotype Printing for the	1465-TR	1956
Field Reproduction of Aerial Photographs		
Evaluation of Pointing to a Sharp Edge	AD 668 260	1968
Evaluation of Published Criteria for Identifying	ETL-0326	1983
Metamorphic Rocks on Air Photos: Two Case		
Studies in the Northeastern United States		
Evaluation of Registering Image Gradients When	ETL-0250	1981
Matching Infrared Imagery to Panchromatic		
Imagery		
Evaluation of Single and Multicolor Map and	ETL-0080	1976
Chart Reproduction Equipment	ETL-0553	1989
Evaluation of the Bathyscan Sweep Survey System	TEC-0008	1992
Evaluation of the ERDAS Image Processing System		
and Its Potential Role in the Digital		
Topographic Support System, An	WEG 0010	1000
Evaluation of the Hydrographic Inland Marine	TEC-0012	1992
Acoustic Platform (HI-MAP) Survey System, An	TTI 0145	1077
Evaluation of the Method of Determining	ETL-0145	1977
Parallax from Measured Phase Difference	48-TR	1969
Evaluation of the Prototype, Natural-Image Computer	AD 673 270	1968
Evaluation of the Stellar-Moon Camera System	1490-TR	1957
Evaluation Tests of Royal Zenith, 29-Press	ETL-0381	1985
Evidential Reasoning in Expert Systems for Image Analysis	E112-0301	1703
Existing Resources, Standards, and Procedures for		
Precise Monitoring and Analysis of Structural		
Deformations - Volume I	TEC-0025	1992
Experimental Assessment of Improved Spatial	ETL-0268	1981
Resolution LANDSAT Data		
Experimental Correlator Studies	AD 374 450L	1966
Experimental Determinations of Fringe Counting	RN-26	1967
Errors Associated with Rotation of a Corner		
Cube Forming an Arm of a Laser Interferometer		
Experimental Heterodyne Optical Correlator	ETL-0071	1976
Experimental Production of Military Geographic	AD 376 554	1966
Intelligence Products from Side-Looking		
Airborne Radar Imagery		
Expert System for Minefield Site Prediction,	ETL-0492	1988
Phase I, First Year Report		
Expert System for Minefield Site Prediction,	ETL-0534	1989
Phase II, Final Report		
Expert System for Minefield Site Prediction,	ETL-0552	1989
Phase III, Final Report	TITT 0415	1006
Expert System for the Computer-Assisted	ETL-0415	1986
Identification of Features on SAR Imagery, An		

TITLE	REPORT NO.	YEAR
Expert Vision System for Autonomous Land Vehicle	ETL-0489	1988
Road Following, An	ETL-0399	1985
Extended Area Exit Pupil Viewer	ETL-0336	1983
Extension of Kendall's Concordance Test Where	E1E-0210	1703
Ties are Allowed, An	AD 328 256	1961
Extraction of Mapping Detail from Radar	AD 326 230	1501
Photography	AD 328 257	1961
Extraction of Mapping Detail from Radar	AD 328 237	1701
Photography	ETL-SR-73-4	1973
Extreme 24-Hour Snowfalls in the United States:	E1L-3K-/3-4	15/3
Accumulation, Distribution, and Frequency		
Feasibility of a Reduced Power-Consumption	ETL-0547	1989
Magnetometer for Use in a Digicomp Lensatic		
Comess		
Feasibilia of Using Optical Power Spectrum	ETL-0186	1979
Analysis Techniques for Automatic Feature		
Classification from High Resolution Thermal,		
Radar, and Panchromatic Imagery		
Feasibility Study for an All-Weather Surveying	37-TR	1968
Signal Light		
Feasibility Study for Field Generation of Input	ETL-0203	1978
for Radar Scene Generation from DLMS Terrain		
and Elevation Data		
Feasibility Study of a Quick Response	ETL-0242	1980
Multicolor Printer (QRMP)		
Feasibility Test of a Proposed 3-D Radar System	AD 349 882L	1964
Feasibility Test Program for Measurement of	ETL-CR-74-16	1974
Gravity Anomaly Changes Using 2 MICRO-g		
Accelerometer in the Inertial Platform		
	ETL-0343	1983
Feature Analysis and Reduction of Laws Texture	1111 00 11	
Measure P. L. C. Thomas Pincers	ETL-0305	1982
Feature Component Reduction Through Divergence	D1D-0303	
Analysis G. 1. F. al Barrat	ETL-0377	1984
Feature Extraction Assessment Study, Final Report	ETL-0377	1979
Feature Extraction of the Illiac IV	ETL-0227	1980
Feature Tagging	ETL-0322	1983
FEED Evaluation	ETL-0322 ETL-0335	1983
FEED Software Documentation	AD 640 799	1965
Fictitious Data Generator for Analytical	AD 040 733	1705
Aerotriangulation	1421-TR	1955
Field Artillery Plotting Equipment	1421-1R 1382-TR	1954
Final Report, Development of Mirror Stereoscope		1958
Final Report on Stable Cartographic Bases	1542-TR ETL-0244	1936
Final Report, Study of Digital Matching of	C1L-U244	1200
Dissimilar Images		

TITLE	REPORT NO.	YEAR
Finite Element Models of the Earth's Gravity Field Phase IV	ETL-0198	1979
	AD 662 725	1967
Five-Color Separation Investigation	33-TR	1966
Fixed and Multiple Frequency Angle Measurements with 35-GHz Microwaves	33-1K	1900
	ETL-0193	1979
Floodplain Tree Species: A Bibliographic  Literature Search with Abstracts	E1E-0193	17/7
	ETL-0134	1977
Flux Valve Heading Reference System	ETL-0039	1976
Forced Dynamics of Asymmetric Spacecraft  Forced Dynamics of Asymmetric Spacecraft  Chapting	TN-70-2	1970
Forecast for the 1970's in Mapping, Charting,	114-70-2	1970
and Geodesy Research and Development	DM 0	1963
Formulas for Computing Atmospheric Refraction	RN-8	1905
for Objects Inside or Outside the Atmosphere	DTI 0131	1077
Formulation of a Space Oblique Mercator Map	ETL-0131	1977
Projection	FIRT 0100	1070
Fort Belvoir Text Placement System, Final	ETL-0199	1979
Technical Report	77/77 0104	1050
Fourier Transform Autocorrelation	ETL-0184	1979
Fractures in Rock: An Annotated Bibliography	ETL-0555	1990
Frequency Dependence of Backscatter from Rough	AD 847 275	1968
Surfaces (An Experiment with Broad-Spectrum		
Acoustic Waves)		1004
Full Color Recorder	TEC-0049	1994
Full View Holograms	ETL-CR-70-1	1970
Further Investigation of an Electronic Angle-	ETL-TR-74-1	1973
Measuring Device		
Further Study of Digital Matching of Dissimilar	ETL-0385	1985
Images		
Gamma-Ray Spectrometer Study	ETL-0008	1975
GEISHA Computer Theory of Operation	AD 883 289L	no date
General Climatological Guide to Daily Freezing	ETL-0287	1982
Conditions: Frost Days, Ice Days, and		
Freeze-Thaw Days, A		
General Non-iterative Solution of the Inverse	RN-11	1963
and Direct Geodetic Problems		
General Programming on a Parallel Processor	ETL-0062	1976
Geocentric Position and/or Orbital Parameters	CR-102-1	1963
with Star Satellite Photography from a		
Single Camera Station		
Geodetic Control by Means of Astronomic and	AD 672 491	1967
Torsion Balance Observations and the	112 0,2 ., 1	
Gravimetric Reduction of Levelling		
Geodetic Control without Triangulation,		
Trilateration, or Gravity Data and		
Gravimetric Reduction of Levelling		
Gravimente veduction of reseming		

TITLE	REPORT NO.	YEAR
1st Interim Report	AD 447 994L	1964
2nd Interim Report	AD 461 100L	1965
3rd Interim Report	AD 477 474L	1965
Geodetic SECOR	AD 721 648	1962
Geodetic SECOR Ground Equipment	AD 721 649	1964
Geodetic SECOR Satellite	ETL-TR-74-6	1974
Geodetic SECOR Wide-BandRF Subsystem	AD 721 641	1967
Geodetic SECOR Wide-Band RF Subsystem for	AD 824 780L	1967
SECOR Ground Equipment Sets		
Geodetic SECOR Wide-Band System	AD 721 640	1966
Geodetic Spacecraft, Final Report	AD 721 650	1961
Geodetic Spacecraft, Addendum	AD 721 651	1961
Geodimeter, Models I and II	1495-TR	1957
Geographic Modelling of Insurgency Resources	AD 848 723L	1969
Geographic Modelling of Insurgency Resources,	AD 851 896L	1969
Appendix		
Geoid Representation from Satellite-Determined	AD 634 541	1966
Coefficients		
Geologic Evaluation of Radar Imagery from	AD 853 884	1969
Darien Province, Panama		
Geometric Simultaneous Multistation Determination,	RN-22	1967
with Constraints, Using Data from Geodetic		
Satellites, A		
Geometrical Quality of Lunar Mapping by	RN-9	1962
Photogrammetric Methods		
Geomorphic Evaluation of Radar Imagery of	ETL-CR-71-2	1971
Southeastern Panama and Northwestern Columbia		
Geopotential Determination from Satellite to	ETL-CR-74-21	1975
Satellite Tracking and Satellite Altimetry		
Geopotential Determination from Satellite to	ETL-CR-74-21-S	1975
Satellite Tracking and Satellite Altimetry,		
Supplement I		
GEOPS	RN-25	1967
Geoscience Potentials of Side-Looking Radar,	AD 650 498	1965
Vol. I		
Geoscience Potentials of Side-Looking Radar,	AD 650 499	1965
Vol. II		
Geo-Spin Precision Inertial Survey	ETL-0135	1978
Gigas-Zeiss Digital Control Unit	ETL-ETR-73-1	1973
Global Climate Change (GCC) Issues and Their Impacts	TEC-SR-1	1991
on the U.S. Army Corps of Engineers		
GPS Tides: A Project to Determine Tidal Datums with the		
Global Positioning System	TEC-0071	1995
Gradiometer-Aided Rapid Gravity Survey System	ETL-0112	1977
Graphic Arts Symbol Generating Hardware for	ETL-CR-74-14	1974
a Gerber Plotting System		
a Golder I toming System		

TITLE	REPORT NO.	YEAR
Graphic Data Handling Techniques	AD 659 807	1967
Gravimetric Geodesy Free of Density Estimates	RN-12	1963
Through Analysis of Discrete Gravity Data		
Gravity Anomalies as Indicators of Groundwater	ETL-CR-73-16	1973
Reserves in Glacial Deposits		
Gravity Correlation Studies for Determination	AD 866 798L	1970
of the Gravity Field of the Earth		
Gravity Study Program, Final Report	ETL-0262	1981
Gravity Study Program, Interim Report	ETL-0253	1981
Ground Target Location Errors Derived From	ETL-0538	1989
Measurements Collected From a Variety of		
Hypothetical Satellite Image Understanding		
Architecture Project, First Annual Report,		
The Sentinel Systems		
Hail and Its Distribution	ETL-SR-73-3	1973
Handbook for Transformation of Datums, Projections,		
Grids and Common Coordinate Systems	TEC-SR-7	1996
Hexagonal Data Base Study	ETL-0338	1983
Hexagonal Data Base Study, Phase II	ETL-0360	1984
High Resolution Optical Power Spectrum Analyzer	ETL-0127	1978
High Resolution Orthophoto Output Table (HIROOT)	AD 856 731L	1969
High Resolution Orthophoto Output Table	ETL-ETR-72-3	1972
High Speed Disc Memory and a Color Image	AD 878 975L	1970
Display for a Small Computer		
High-Speed, Large-Format Film Writer	ETL-0389	1985
Methodologies and Design Study		
High Speed Parallel Sensing Scheme	ETL-0119	1977
History of U.S. Army Engineer Topographic	ETL-SR-74-1	1973
Laboratories (1920 to 1970)		
History Update of the U.S. Army Engineer Topographic		
Laboratories, Fort Belvoir, Virginia, 1984-1988, A	TEC-SR-6	1994
Holographic Compensation of Wavefront Aberrations	ETL-RN-74-11	1975
Holographic Optical Elements With Low Q-Factors	ETL-0123	1977
Holographic Ray Tracing and Spot Diagrams	ETL-0052	1975
Holographic Stereogram Display Techniques for	ETL-CR-74-2	1973
the Viewing and Mensuration of Stereo		
Photogrammetric Imagery	TIME AAAA	1051
Holographic Terrain Displays	ETL-0083	1976
Holography and Stereoscopy	ETL-CR-72-2	1972
Horizontal Gradients of Gravity in Geodesy	AD 672 492	1964
Horizontal Gradients of Gravity in S.W. Ohio	AD 672 489	1967

TITLE	REPORT NO.	YEAR
Hot Weather Testing of 10-Second Direction Theodolite with Universal Tribrach and	1289-TR	1953
Universal Tripod, Astronomical Attachment, Universal Sun Compass, Lensatic Compass, and		
Wrist Compass Air Photo Patterns	ETL-0438	1986
Hough Transform on the Butterfly and the NCUBE, The	ETL-0498	1988
Hourly and Daily Precipitation Frequencies for the	E1E-0498	1700
United States	ETL-0589	1991
Hybrid Methodology for Detecting Cartographically	D1B-0307	1,,,,
Significant Features Using Landsat TM Imagery Hyperspectral Gas Analysis System (HyGAS) SBIR	TEC-0005	1992
	120 000	
Phase I Final Report Hyperspectral Image Exploitation SBIR Phase I	TEC-0004	1992
Final Report		
Hyperspectral Image Exploitation SBIR Phase II	TEC-0015	1991
Final Report		
Hyperspectral Signatures (400 to 2500 nm) of	ETL-0573	1990
Vegetation, Minerals, Soils, Rocks, and		
Cultural Features: I. Laboratory and Field		
Measurements		
		1006
IBIS Query — Software to Support the Image Based	ETL-0422	1986
Information System (IBIS) Expansion for Mapping,		
Charting, and Geodesy	TEC-0073	1995
IFSAR Data for Automated Rapid Mapping Phase I SBIR	ETL-0237	1980
Image Alignment and Correlation System	ETL-0366	1982
Image-Based Approach to Mapping, Charting,	L1L-0500	1702
and Geodesy	ETL-0061	1976
Image Correlation on a Parallel Processor Image Enhancement by Chemical Intensification	ETL-0014	1975
Image Processing for Visual Navigation of	ETL-0406	1985
Roadways		
Image-Processing Precision and Affecting	ETL-RN-71-6	1971
Relative Orientation		
Image Scanner Technology Study	ETL-0137	1978
Image Tube Validation Study	ETL-CR-70-5	<b>197</b> 0
Image Understanding Architecture Final Report	TEC-0029	1991
Image Understanding Architecture Project,	ETL-0499	1988
First Annual Report, The		
Image Understanding Architecture Project,	ETL-0542	1989
Second Annual Report, The		
Image Understanding Architecture Prototype Evaluation	m=0.0044	1002
and Development	TEC-0044	1993
Image Understanding Environment for DARPA Supported Research and Applications, First Annual Report	TEC-0017	1991

TITLE	REPORT NO.	YEAR
Image Understanding Environment for DARPA Supported	TEC-0021	1992
Research and Applications, Second Annual Report		
Image Understanding Environment for ARPA Supported		
Research and Applications	TEC-0078	1996
Implications of Symbol Usage on U.S. Army	AD 667 979	1968
Maps for an Automated Cartographic System		
Implications of Symbol Usage on U.S. Army	AD 667 986	1968
Maps for an Automated Cartographic System, Appendix		
Improvement Program Automatic Map	AD 442 522	1964
Compilation System		
Improving Classification Accuracy of Radar	ETL-0502	1988
Images Using a Multiple-Stage Classifier		
Inertial Platform Subsystem for Army Artillery	AD 681 931	1962
Inertial Survey System (GEISHA)		
Inertial Positioning System Test Data Summary	ETL-0028	1975
Report		
Inertial Survey Applications to Civil Works	ETL-0309	1983
Inertial Survey Equipment (GEISHA)	AD 814 051	1963
Inferential Techniques for Soil Depth	ETL-0036	1975
Determinations, Part I: Coleogyne		
ramossissima Torr. (Black-Brush)		
Inferential Techniques for Soil Depth	ETL-0176	1979
Determinations, Part II: Artemisia		
filifolia Torr. (Sand Sagebrush)		
Influence of Atmospheric Refraction on	RN-10	1963
Directions Measured to and from a Satellite, The		
Instrument for Measuring Absolute Acceleration	RN-17	1966
of Gravity		
Instrument to Measure the Tilt of Large	ETL-0313	1983
Structures, An		
Instrumentation for Color Aerial Photography	ETL-RN-70-1	1970
Integration of Artificial Intelligence Concepts	ETL-0425	1986
into the Methods for Extracting Line Objects		
from Monochromatic Aerial Imagery		1004
Intelligent Advisors for Cross-Country	ETL-0365	1984
Route Planning		
Intelligent TDA Systems Using Neural Networks	TEC-0007	1992
Phase I Final Report		
Interactive Digital Correlation Techniques for	ETL-0272	1981
Automatic Compilation of Elevation Data		1000
Interactive Digital Image Processing	ETL-0241	1980
for Terrain Data Extraction	TITT 0000	1001
Interactive Digital Image Processing	ETL-0277	1981
for Terrain Data Extraction, Phase 2	ETT 0004	1000
Interactive Digital Image Processing	ETL-0294	1982
for Terrain Data Extraction, Phase 3		

TITLE	REPORT NO.	YEAR
Interactive Digital Image Processing for Terrain Data Extraction, Phase 4	ETL-0348	1983
Interactive Digital Image Processing for Terrain Data Extraction, Phase 5	ETL-0374	1984
Interactive Digital Image Processing Investigation	ETL-0172	1978
Interactive Digital Image Processing Investigation, Phase II	ETL-0221	1980
Interactive Image Analysis System Design Interactive Knowledge-Based Cartographic	ETL-0312 ETL-0273	1982 1981
Feature Extraction Interagency Energy and Environmental Survey		1977
Interferometer Data Reduction Study Interim Solution Rectifier Van	AD 503 143L 1355-TR	1969 1954
Interim Technical Progress Report, Ninth SemiAnnual Technical Report, Sep 1971-Mar 1972, Project THEMIS, A Center for Remote Sensing	ETL-CR-72-4	1972
Interpolation of Deflections from Horizontal Gravity Gradients	AD 672 490	1967
Interpolation of Gravity Anomalies and Deflection of the Vertical Components from	ETL-0075	1976
Rapid Gravity Survey System Data Interpretation of Radar Imagery for Terrain		1968
Analysis in Tropical Environments Introduction to the Terrain Effects on the Intelligence Preparation of the Battlefield (IPB)	ETL-0481	1987
Inverse Perspective of a Road from a Single Image Inverse Scattering Applications in Determining	ETL-0429 ETL-0279	1986 1981
Terrain Feature Parameters Investigation and Evaluation of Planigon Lens Distortion Characteristics	1472-TR	1957
Investigation, Experiments, and Study of Electron Beam Recorder (EBR) Techniques for Map	ETL-CR-73-15	1973
Production Investigation of Bjerhammar's New Gravity	AD 460 404	1964
Reduction Method Investigation of Cartographic Pressplate	ETL-0043	1976
Recording from Digital Data Investigation of Continuous Photoconductive Layer Arrays	ETL-0011	1975
Investigation of Discrete Function Technology for Topographic Sciences	ETL-0162	1978
Investigation of Electro-Acoustic Technology for Topographic Application	ETL-0160	1978
Investigation of Extrema in Digital Images for Texture Analysis	ETL-0210	1979

TITLE	REPORT NO.	YEAR
Investigation of Fusion and Fixation Disparity Limits for Photogrammetry	AD 625 217	1965
Investigation of Linear Transformations for	ETL-0181	1979
Automatic Cartographic Analysis		1777
Investigation of Multiband Photographic	AD 479 300L	1965
Techniques, Vol. I		
Investigation of Photographic Mapping Detail	AD 286 715	1962
and Data Encoding		
Investigation of Techniques to Generate Contours	ETL-0029	1975
from Stereo Pairs		
Investigation of the Application of "Array	ETL-0141	1978
Algebra" to Terrain Modeling	17 460 4017	
Investigation of the Electronic Distance	AD 460 401L	1964
Measuring Equipment Electrotape	DM C	1060
Investigation of the Geometrical Quality of the Relative and Absolute Orientation Procedures	RN-6	1962
and the Final Results of the Photogrammetric		
Procedure		
Investigation of the Real-Time Accuracy of the DGPS Method	TEC-0024	1992
Investigations into the Problems of Relative	AD 452 686L	1964
Orientation in Stereo Aerial Photogrammetry		
Investigations of Basic Geometric Quality of	RN-4	1962
Aerial Photographs and Some Related Problems		
Investigations of the Use of Conventional Films	ETL-0177	1979
in the ETL Cartographic EBR		
Investigations Related to the Establishment of a	AD 697 163	1969
World Geodetic System	77077 0455	1005
IRS: A Simulator for Autonomous Land Vehicle	ETL-0455	1987
Navigation		
Joint Analyses in Glen Canyon National Recreational Area	ETL-0073	1976
	FIRST 0161	1070
Kalman Filtering and Smoothing in Fotonap for	ETL-0161	1978
Orbit Determination using GPS Measurements	ETI CD 71 2	1971
KANDIDATS  Washington Demoning for	ETL-CR-71-3 ETL-0486	1971
Knowledge-Based Analysis of Scene Dynamics for Target Motion Detection, Recognition, and Tracking	L1L-0460	1707
Knowledge-Based Analysis of Scene Dynamics	ETL-0525	1989
for Target Motion Detection, Recognition and	212 0020	1707
Tracking, Second Annual Report		
Knowledge-Based Images Analysis	ETL-0258	1981
Knowledge-Based Vision Techniques for the	TEC-0022	1991
Autonomous Land Vehicle Program, Final Report		
Knowledge-Based Vision Techniques (March 1985	ETL-0431	1986
- March 1986)		

TITLE	REPORT NO.	YEAR
Knowledge-Based Vision Techniques (March 1986 - March 1987)	ETL-0487	1987
Knowledge-Based Vision Techniques: Obstacle Detection and Avoidance, Fourth Annual Report	ETL-0536	1989
Knowledge-Based Vision Techniques, Third Annual Report	ETL-0521	1988
Knowledge-Based Vision Techniques for the Autonomous Land Vehicle Program	ETL-0439	1986
Knowledge-Based Vision Techniques for the Autonomous Land Vehicle (ALV) Program, Second Annual Report	ETL-0507	1988
Knowledge-Based Vision Techniques for the Autonomous Land Vehicle (ALV) Program, Third Annual Report	ETL-0512	1988
Knowledge-Based Vision Techniques for the Autonomous Land Vehicle Program Fourth Annual Report	ETL-0582	1990
Knowledge-Based Vision Techniques - Task B: Terrain and Object Modeling Recognition Executive Summary	ETL-0557	1990
Knowledge-Based Vision Techniques — Task B: Terrain and Object Modeling Recognition (March 13, 1985 - March 13, 1986)	ETL-0428	1986
Knowledge-Based Vision Techniques — Task B: Terrain and Object Modeling Recognition (March 13, 1986 - April 27, 1987)	ETL-0485	1987
Knowledge-Based Vision Techniques Task B: Terrain and Object Modeling Recognition, Third Annual Report	ETL-0535	1989
Knowledge-Based Vision Techniques Task B: Terrain and Object Modeling Recognition - Volume I: Autonomous Systems for Navigation and Terrain Recognition	ETL-0558	1990
Knowledge-Based Vision Techniques Task B: Terrain and Object Modeling Recognition -	ETL-0559	1990
Volume II: Tech Base Vision Research Knowledge-Based Vision Techniques Task B: Terrain and Object Modeling Recognition - Volume III: Image Understanding Software Environments	ETL-0560	1990
KT2 Gyro-Theodolite (Otto Fennel GMBH & Co)	57-TR	1970
Land Cover Classification from LANDSAT Data: Phase III of a Joint OCE/NASA Demonstration	ETL-0175	1979
Landforms of Granitic Rocks: An Annotated Bibliography, The	ETL-0566	1990

TITLE	REPORT NO.	YEAR
LANDSAT and DMA Elevation Study	ETL-0386	1984
LANDSAT D: Corps of Engineers Interface with	ETL-0151	1978
Advanced NASA Ground Systems Study		22.0
LASS-II Rapid Geodetic Survey System (RGSS)	ETL-0518	1986
Light, Target for Ranging Pole	1402-TR	1955
Lightweight North-Seeking Gyro Azimuth	AD 486 317	1965
Surveying Instrument, Model 11NG531A		
Lightweight North-Seeking Gyro Azimuth	AD 844 011L	1968
Surveying Instrument, Model 11NG531B		
Linear Feature Extraction from Radar Imagery	ETL-0405	1985
Linear Feature Extraction from Radar Imagery,	ETL-0469	1987
SBIR Phase II Base Contract		
Linear Feature Extraction From Radar Imagery:	ETL-0497	1988
SBIR Phase II, Option I		
Linear Feature Extraction From Radar Imagery:	ETL-0530	1988
SBIR Phase II, Option II	94	
L.N.K. Software Systems for Transferring,	ETL-0318	1983
Merging, and Displaying DFAD/DTED Data on AMS/CAPIR		
Local Gravity Field Modeling	ETL-0448	1986
Long Range Survey System	AD 356 441L	1964
Long Range Surveying System	AD 328 203	1960
Low Cost Gyrocompass	ETL-0355	1984
Low Intensity Conflict Viewer (LIC-VIEW) Phase I	TEC-0043	1992
Low Light Level Photography	32-TR	1966
Manual and Automated Line Generalization and Feature Displacement	ETL-0359	1984
Manual for Maintenance and Operation of the	ETL-0040	1976
MB-1 Multiband Aerial Camera	L1L-0040	1770
Manual of Environmental Effects, Central America	TEC-SR-2	1992
Manual of Environmental Effects, The Countries of	120-510-2	1772
Former Yugoslavia and Albania	TEC-SR-5	1993
Manual of Environmental Effects, The Horn of Africa	TEC-SR-4	1992
Map Coating Concept Studies	AD 679 215	1968
Map Illuminator Test, Phase I	ETL-0034	1975
MAPCON Design Study	AD 854 619L	1967
Mapping Camera Image Errors Due to Star	ETL-RN-73-1	1973
Camera Identification and Measuring Errors	D1D-R(1-75-1	1775
Mapping from Airborne Radar Scope Presentations		1958
Mapping from Radar Presentations, Second Interim	1397-TR	1955
Report		
Mapping from Side-Looking Radar	AD 392 041L	1968
Mapping with Minimum Ground Control	1483-TR	1957
MAT Transponder Model No. 10002	AD 721 638	1967

TITLE	REPORT NO.	YEAR
Materials Research for Holographic Recording (Report No. 1, Multiple Image Storage of	ETL-0088	1976
Continuous Tone Data in Volume Holograms)  Materials Research for Holographic Recording  (Report No. 2, Bleaching Methods for	ETL-0156	1978
Photographically Recorded Holograms)  Materials Research for Holographic Recording  (Report No. 3, Hardened Gelatin Holographic	ETL-0197	1979
Recording Materials)  Mathematical Analysis of a Technique for the  Calibration of a Synthetic Aperture Radar, A	43-TR	1968
Mathematical Method for Inversion in Atmospheric Remote Sensing, A	ETL-0346	1983
Mathematical Techniques for Automated Cartography	ETL-CR-73-4	1973
Mathematics of Geodetic SECOR Data Processing	AD 721 837	1964
Matrix Evaluation of Remote Sensor Capabilities	ETL-TR-72-6	1972
for Military Geographic Information (MGI)		
MATS Performance with the SECOR System	AD 721 635	no date
MATS Transponder	AD 721 634	1966
Measurement of the Change in the Deflection of	ETL-0138	1977
of the Vertical with a Schuler-Tuned North-		
Slaved Inertial System		
Measurement Techniques of Electrical Parameters	ETL-0304	1982
of Surface Materials in the X-Band Region		
Mechanization Design, Performance Simulations, and Cost Trade-Offs Hybrid INS/GPS/PLRS	ETL-0409	1985
Positioning and Orientation Systems	#0 FFF	1070
Mensuration and Reduction Accuracy and Precision Standard Applicable to an Integrated World- Wide Topographic System	58-TR	1970
Methodological Preliminaries to the Development of an Expert System for Aerial Photo	ETL-0342	1984
Interpretation		
Methodology for Military Geographic Analysis, A	36-TR	1967
Methods and Results of Remote Barometric	ETL-RN-73-3	1973
Altimetry and Views on the Estimation of		
Meteorological Field Variables		
Methods for Calculating Atmospheric Refraction and Its Perturbation	ETL-0299	1982
Methods of Monitoring the Persian Gulf Oil Spill Using Digital and Hardcopy Multiband Data	TEC-0014	1992
Micromap Camera for Display Systems	ETL-ETR-71-5	1971
Microreduction and Enlargement of Graphic	ETL-0063	1977
Information Study (MEGIS)		
Microwave Pointing Variations and Angle	26-TR	1966
Measurements	·	

TITLE	REPORT NO.	YEAR
Military Applications of Multiband Aerial Photography (Report No. 5 in the ETL Series on Remote Sensing)	ETL-0030	1975
Military Geographic Intelligence Products Associated with the SLAR Topo Map Test in Panama	ETL-ETR-70-10	1970
Military Potential Test of Selected Items of Hydrologic Survey Equipment	AD 890 746	1971
Military Significance of the USAETL Research Note "A New Solution for the Anomalous Gravity Potential Resulting from a Modification of Molodensky's Linear Approximation, Its Practical Significance and Numerous Ramifications", The	RN-34	1970
Miniaturized Gyrocompass	ETL-0289	1982
Miniaturized Gyrocompass (Small North-Orienting Device)	ETL-ETR-70-11	1970
Minipim-MK II Precision Indicator of the Meridian (British Aircraft Corp.)	45-TR	1969
Mini Raster-to-Vector Conversion	ETL-0269	1981
Mod II Power Supply for Army Artillery Inertial Survey System (GEISHA)	AD 814 067	1963
Modeling and Contouring Irregular Surfaces Subject to Constraints	ETL-CR-74-19	1975
Modes of Satellite Triangulation Adjustment, Vol. I	AD 633 863	1966
Modes of Satellite Triangulation Adjustment, Vol. II	AD 633 864	1966
Modification of a Cartographic Mapping Camera from Type T-11 to Type KC-4B (with Automatic Exposure Control)	ETL-TR-71-1	1971
Modification of the MUSAT Aerotriangulation Programs to Accommodate Bathymetric Image Points	ETL-0306	1983
Modifications to FOTONAP	ETL-0116	1977
Mono Versus Stereo Analytical Photogrammetry, Part 1	AD 664 184	1967
Mono Versus Stereo Analytical Photogrammetry, Part 2	AD 828 750	1968
Morphometry of Landforms: Quantification of Slope Gradients in Glaciated Terrain	ETL-RN-72-3	1972
Motion Analysis and Object Recognition for Autonomous Navigation	TEC-0020	1991
Multi-Altitude Transponder — Volume I, Schematic Diagrams	AD 721 636	no date
Multi-Altitude Transponder — Volume II, Part 1, Test Procedures and Results of Test MATS Transponder	AD 721 628	no date

TITLE	REPORT NO.	YEAR
Multi-Altitude Transponder — Volume II, Part 2	AD 721 629	1967
Multi-Altitude Transponder — Volume II, Part 3	AD 721 630	1967
Multi-Altitude Transponder — Volume II, Part 4	AD 721 631	no date
Multi-Altitude Transponder — Volume II, Part 5	AD 721 632	no date
Multi-Altitude Transponder — Volume III, Final	AD 721 637	1967
Reliability Report		
Multi-Altitude Transponder — Volume IV, Design	AD 721 633	no date
Considerations and Component Selection Criteria		
Multi-Image Correlation Systems Study for MGI	AD 841 079	1968
Multi-Image Correlation Systems Study,	AD 870 453	1969
Quantitative Evaluation of Electronic		
Multi-Image Processor		
Multi-Image Pattern Recognition: Ideas and	AD 863 596	no date
Results		
Multi-Parametric Figures of Equilibrium:	AD 603 073	1964
Curvature of the Plumb Line		
Multi-Parametric Theory of Spheroidal		1966
Equilibrium Figures and the Normal-		
Spheroids of Earth and Moon		
Multispectral Image Maps from Landsat Thematic Mapper	ETL-0590	1991
Data		
Multiple Camera Analytical Triangulation Program		1965
Multiple Station Analytical Triangulation Program	AD 638 750	1965
Multisensor Approaches for Determining	ETL-0314	1983
Deflections of the Vertical		
Multisensor Study of Plant Communities at	AD 698 098	1969
Horsefly Mountain, Oregon		
Multisource Image Analysis	ETL-0208	19 <b>7</b> 9
Multispectral Capability of H&W Film	ETL-0101	1977
(Photographic Technology Series)		
Multispectral Target Signatures	ETL-0165	1978
Multivariate Spectral Analysis to Extract Materials		
from Multispectral Data	TEC-0039	1993
MUSAT IV	ETL-CR-70-6	1970
Natural Image Computers, Vol. I	AD 856 137L	1967
Natural Image Computers, Vol. II	AD 856 138L	1967
Near-Real-Time Application of Digital Terrain	ETL-0142	1978
Data in a Minicomputer Environment	•	
Near-Surface Bathymetry System (Report No. 11	ETL-0163	1978
in the ETL Series on Remote Sensing)		
Neural Networks for Object Detection Using	ETL-0585	1991
All-Source Imagery		

TITLE	REPORT NO.	YEAR
New Analyses and Methods Leading to Improved Target Acquisition Requirements Involving Systems, Geodetic and Reentry Errors, and Increased Weapons Effectiveness for Conventional Weapons (Part I)	RN-35	1970
New Analyses and Methods Leading to Improved Acquisition Requirements Involving Systems, Geodetic and Reentry Errors, and Increased Weapons Effectiveness for Conventional Weapons (Part II)	ETL-RN-70-3	1970
New Analytical Methods for Simulation/ Estimation of Asymmetric Satellite Dynamics	ETL-CR-73-21	1973
New Formulas Useful When Changing Ellipsoidal Parameters or Orientation	RN-2	1962
New Insights and Results Regarding L.F. Richardson's Turbulence Criterion	ETL-RN-72-2	1972
New Large-Scale, High-Resolution, Multicolor Software Display Concept, A	ETL-0388	1985
New Method for Determining Azimuth and Latitude Independent of Time and Zenith Distance	RN-17	1966
New Methods of Change Detection Using Multispectral Data	ETL-0586	1991
New Solution for the Anomalous Gravity Potential Resulting from a Modification of Molodensky's Linear Approximation, Its Practical Significance and Numerous Ramifications, A	RN-33	1970
1986 Year End Report for Road Following at Carnegie -Mellon	ETL-0464	1987
1987 Year End Report for Road Following at Carnegie-Mellon	ETL-0514	1988
1988 Year End Report for Road Following at Carnegie-Mellon	ETL-0537	1989
Noise Removal on Radar Imagery Using Local Gradient and Statistics	ETL-0402	1985
Noncontact Array Velocimeter Non-COTS Displays: The Display Technology of	ETL-0077	1976
the Future North-Seeking Gyrocompass, Final Technical Report	TEC-0054 ETL-0251	1994 1980
Observations on Multi-Peg Towers of Hanoi Occurrence of Ice in the Form of Glaze, Rime, and Hoar-Frost with Respect to the Operation and Storage of V/STOL Aircraft	ETL-0476 ETL-SR-73-1	1986 1973
On Computing Histograms of Images in Log η Time Using Fat Pyramids	ETL-0454	1987

TITLE	REPORT NO.	YEAR
On the Energy Integral for Satellites	RN-29	1968
On the Thermal Nature and Sensing of	ETL-RN-73-4	1973
Snow-Covered Arctic Terrain		
Optical-Electronic Precision Pointing System	AD 883 021	1965
Optical Power Spectral Analysis for	ETL-0212	1980
Machine-Readable Factor Maps		
Optical Power Spectrum Analysis (OPSA)	ETL-TR-74-11	1975
(Report No. 1 Recording Optical Spectrum	•	
Analyzer System Hardware)		
Optical Theodolite Readout	AD 821 660L	1967
Optimized Digital Automatic Map Compilation System		
1st Interim Report	AD 412 798	1963
2nd Interim Report	AD 422 227	1963
3rd Interim Report	AD 432 243	1963
4th Interim Report	AD 600 117	1964
Optimized Method for the Derivation of the	ETL-0122	1977
Deflection of the Vertical from RGSS Data		
Optimized Post-Mission Determination of the	ETL-0164	1978
Deflection of the Vertical Using RGSS Data		
Orthographic Radar Restitutor Engineer Design	ETL-ETR-74-6	1974
Test		
Orthophoto Viewer and Transfer Device	AD 722 788	1965
Overview of Vision-Based Navigation for Autonomous	ETL-0479	1987
Land Vehicles 1986, An		
Parallel Algorithms for Computer Vision	ETL-0456	1987
Parallel Algorithms for Computer Vision,	ETL-0495	1988
Second Year Report		
Parallel Algorithms for Computer Vision, Third	ETL-0528	1989
Year Report		
Parallel Algorithms for Computer Vision,	ETL-0564	1990
Final Report	Y 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	1054
Parallel Optical Processing to Convert Elevation	ETL-RN-74-9	1974
Data to Slope Maps. Phase I: Theoretical		
Analysis	FT DN 74 10	1075
Parallel Optical Processing to Convert Elevation	ETL-RN-74-12	1975
Data to Slope Maps. Phase II: Practical		
Considerations	PTI 0115	1077
Parallel Profile Plots for Visual Terrain Display	ETL-0115	1977
Parallel Vision Algorithm Design and	ETL-0513	1988
Implementation, 1987 End of Year Report	ETI 0541	1989
Parallel Vision Algorithm Design and	ETL-0541	1707
Implementation, 1988 End of Year Report	ETI 0400	1987
Parallel Vision Algorithms, First Annual	ETL-0488	170/
Technical Report		

TITLE	REPORT NO.	YEAR
Parallel Vision Algorithms, Second Annual	ETL-0529	1989
Technical Report		
Parser for the ISO 8211 Data Format, A	TEC-0045	1994
Particulate Matter Considerations in the Design	ETL-SR-72-2	1972
of V/STOL Aircraft		
Passive Recovery of Scene Geometry for an Unmanned		
Ground Vehicle	TEC-0033	1993
Passive Recovery of Scene Geometry for an Unmanned		
Ground Vehicle, Second Annual Report	TEC-0053	1994
Passive Recovery of Scene Geometry for an Unmanned		
Ground Vehicle	TEC-0069	1995
Pattern Classification Techniques Applied to High	ETL-0443	1986
Resolution, Synthetic Aperture Radar Imagery		
PDEF: A Standard File Format for Data Interchange	ETL-SR-7	1991
Perception for Outdoor Navigation - First Year	ETL-0581	1990
Report		
Performance Evaluation of the Position and	ETL-0166	1978
Azimuth Determining System (PADS) with an		
Improved Vertical Accelerometer		
Personal Navigation and Reporting - Phase I	TEC-0036	1993
Personal Navigation and Reporting - Phase I	TEC-0037	1993
Personal Navigation and Reporting - Phase II	TEC-0083	1996
Phoenix Laser and Terrain Profile Test		1966
Photo Analysis of a Desert Area	ETL-0068	1976
Photo-Geomorphology of Coastal Landforms,	ETL-SR-74-5	1974
Cat Island, Bahamas (Vol. II)		
Photogrammetric and Tracking Network Analysis	ETL-CR-73-17	1973
Program		
Photogrammetric and Tracking Network Analysis	ETL-0018	1975
Program for the UNIVAC 1108 Computer		
Photogrammetric Applications to Field Artillery	56-TR	1970
Photogrammetric Aspects of the Heterodyne	ETL-0095	1976
Optical Correlator		
Photogrammetric Flash Triangulation for Corps		
of Engineers Field Use		1060
1st Interim Report	AD 265 026	1960
2nd Interim Report	AD 265 036	1961
3rd Interim Report	AD 271 438	1961
Final Report	AD 271 439	1961
Photogrammetric Reduction for ATL	AD 223 674	1961
Photographic Visibility of Light Images on		1966
Aerial Film	ATD 000 ECCT	1065
Photomap Reproduction System	AD 882 566L	1965
Physical Characteristics of Some Soils from the	TEC 0022	1002
Middle East	TEC-0032	1993

TITLE	REPORT NO.	YEAR
Pilot Program of Lunar Photography for Precise	AD 452 237	1964
Selenodesy  Plastic Scribing Color Separation for Military	1485-TR	1957
Plastic-Scribing Color Separation for Military  Cartography	1403-110	1757
Platform Orientation System Test Program	ETL-0100	1976
Point Light Source Contact Printer	ETL-0084	1976
Photographic Technology Series		
Position and Azimuth Determining System (PADS)	ETL-ETR-74-1	1974
Position and Azimuth Determining System (PADS)	ETL-0009	1975
Helicopter Study		
Position and Surveying System (PASS)	ETL-CR-73-11	1973
Possibility of Adapting a Land Navigation	ETL-0078	1976
System to Perform Artillery Survey		
Post-Mission Smoothing and Analysis of the	ETL-0065	1976
Measurements of the Change in the Deflection		
of the Vertical Obtained by the Rapid		
Geodetic Survey System (RGSS) at the		
White Sands Test Range	TT 0050	1076
Potential of Thermal IR Imagery for Supplemental	ETL-0059	1976
Map Information in Snow-Covered Areas	EET OD 50 1	1070
Potential Sand and Dust Source Areas	ETL-SR-72-1	1972 1966
Practical Field Accuracy Limits for a Wild T-2	30-TR	1900
Theodolite	ETL-RN-71-1	1971
Practical Second-Order Theory for the Disturbance	E1L-KN-/1-1	17/1
Potential and Deflections of the Vertical, Including an Analysis of the Limitations of		
the Molodensky/Brovar Series and Downward		
Continuation of Gravity		
Practical Tests of the Theoretical Accuracy of	RN-1	1962
Aerial Triangulation		
Precise Photogrammetric Orientation and Data	AD 238 857	1960
Determination of HIRAN Mapping System		
AN/APQ 73		
Precision Enlarging Printer (4X)	27-TR	1966
Precision 2.0X Enlarging Printer	55-TR	1970
Precision 3.3X Enlarging Printer	ETL-ETR-71-3	1971
Precision STARAN Correlator	ETL-0133	1977
Predesign Data for the Radar Stereo	AD 701 169	1969
Equipment Program	DWI DNI 64 6	1974
Preliminary Image Data Extraction Experiments	ETL-RN-74-7	1974
with the Phase I, Automated Image Data		
Extraction System-I	ETL-0315	1983
Preliminary Radar Feature Extraction and	P1D-0313	1705
Recognition Using Texture Measurement	AD 721 639	1965
Preliminary Reliability Prediction — MATS	1117 121 037	1705

TITLE	REPORT NO.	YEAR
Preliminary Study into the Principles of	AD 401 863	1962
Continuous Tone Electrophotography		
Preproduction Model Cartographic EBR System	ETL-0246	1980
Proceedings of the International Symposium	AD 825 792	1967
Figure of the Earth and Refraction		
Product Improvement Test Report of Astronomic	28-TR	1966
Surveying Equipment		
Production of Dense Range Images with the	ETL-0491	1988
CVL Light-Stripe Range Scanner		
Program and Test Procedures to Determine the	AD 617 698	1968
Geocentric Coordinates and Orbital		
Parameters of an Unidentified Satellite		
Program Maintenance Manual for the Reference	ETL-0067	1976
Scene Software (RSS)		
Programmer for Army Artillery Inertial Survey	AD 814 065	1963
System (GEISHA)		
Programming Environment for Parallel Vision	ETL-0433	1986
Algorithms, A (February 1985 - February 1986)		
Programming Environment for Parallel Vision	ETL-0457	1987
Algorithms, A (February 1986 - February 1987)		
Programming Environment for Parallel Vision	ETL-0563	1990
Algorithms, A - Final Technical Report		
Programming Environment for Parallel Vision	ETL-0510	1988
Algorithms, Third Annual Report, A		
Project Ostrich A Feasibility Study: Detecting		
Buried Mines in Dry Soils Using Synthetic		
Aperture Radar	TEC-0040	1993
Project SAND — Availability of Construction	Tech Memo 156-1	1968
Materials in the Mekong Delta		
Project SAND (Phase III) — Analysis of Remote	ETL-TR-71-3	1971
Sensor Imagery of Selected Areas in the		
Mississippi Delta		
Project THEMIS: A Center for Remote Sensing		
Study Plan	AD 690 361	1968
Progress Report	AD 847 276	1968
Interim Report	AD 683 584	1968
Progress Report	AD 853 884	1969
Progress Report	AD 864 859	1969
5th Semi-annual Report	AD 869 511	1970
6th Semi-annual Report	AD 879 981L	1970
7th Semi-annual Report (ETL-CR-71-7)	AD 726 966	1971
8th Semi-annual Report (ETL-CR-71-21)	AD 735 752	1971
Final Report (ETL-CR-74-10)	AD A003 266	1974
Propagation of Very Short Radio Waves Through	ETL-RN-74-1	1973
the Ionosphere and the Investigation of		
Ionospheric Models		

TITLE	REPORT NO.	YEAR
Proposed Stereophotogrammetric System for Topographic Mapping from Photography	1518-TR	1958
Taken at Altitudes up to 100,000 Ft, A	17-TR	1963
Prototype Automatic Mosaicking System	17-1R ETL-0035	1903
Prototype Electrostatic Image Reproducer	ETL-0033 ETL-0204	1973
Prototype Image Spectrum Analyzer (PISA)	E1L-0204	13/3
for Cartographic Feature Extraction	ETL-ETR-72-4	1972
Prototype Lithographic Enlarging Projection	E1L-E1R-/2-4	17/2
Platemaker	4 TD	1962
Prototype Stereomat System	4-TR	1902
Quantitative Geography: Achievements and	ETL-CR-71-12	1971
Prospects		
RACOMS Cartographic Module	ETL-ETR-70-3	1970
RACOMS Compilation Module I	ETL-ETR-70-1	1970
RACOMS Data Processing Module	ETL-ETR-70-4	1970
RACOMS Image Processing Module I	47-TR	1969
RACOMS Image Processing Module II	ETL-ETR-70-2	1970
RACOMS Map Revision Module	ETL-ETR-70-5	1970
RACOMS Operations Module	44-TR	1969
RACOMS Pass Point Marking and Measuring Instrument	53-TR	1970
RACOMS Reproduction Module	ETL-ETR-71-1	1971
Radar Backscatter from a Vegetated Terrain: A	ETL-0159	1979
Discrete Scattering Approach		
Radar Bridge Patterns Extraction and Recognition	ETL-0323	1983
Radar Image Simulation of Seasonally Dependent	ETL-0188	1979
Reference Scenes		
Radar Image Simulation Project	ETL-0098	1976
Radar Image Simulation Project: Development of	ETL-0047	1976
a General Simulation Model and an Interactive		
Simulation Model, and Sample Results		
Radar Image Simulation: Validation of the Point	ETL-0117	1977
Scattering Model, Volume I		
Radar Image Simulation: Validation of the Point	ETL-0118	1977
Scattering Model, Volume II		
Radar Image Simulation: Validation of the Point	ETL-0155	1978
Scattering Method Addendum		
Radar Mapping Beacon Analysis	ETL-CR-73-22	1973
Radar Mapping Test Ranges	AD 231 433	1959
Radar Network Adjustment		1962
Radar Presentation Restitutor		1956
Radar Sketching Device	20-TR	1965
Radar Stereo Equipment Program	AD 732 875	1971
Total Proton Edailymann Lobiani		

TITLE	REPORT NO.	YEAR
Radar, Thermal Infrared, and Panchromatic Image Collection and Analysis	ETL-0249	1980
Radiative Transfer in One-Dimensional Discretely Stratified Media	ETL-0236	1980
RADIUS: Model-Based Optimization	TEC-0064	1995
RADOT Code for the Tracking of Radar Incident on Trees	ETL-0147	1978
RADOT Code System to Calculate the Radar Return from a Forested Area	ETL-0206	1979
Rainfall Intensities in the Conterminous United	ETL-SR-74-3	1973
States and Hawaii (Supplement 1 to ETL-SR-72-5:		
Distribution of Mean Monthly Precipitation and Rainfall Intensities)		
Range Imagery Algorithms for the Detection of	ETL-0461	1987
Obstacles by Autonomous Vehicles		
Rapid Cartographic Processing System Study	AD 454 086L	1964
Rapid Combat Mapping System Evaluation	ETL-ETR-70-8	1970
Rapid Geodetic Survey System	ETL-0074	1976
Rapid Geodetic Survey System (RGSS) Deflection	ETL-0308	1982
of the Vertical and Gravity Anomaly Tests at		
White Sands Missile Range, 1980		
Rapid Gravity Survey System Aided with	ETL-0113	1977
Supplemental Gravimetric Data		
RC-135A/USQ-28 Category II Test (The	TM-69-1	1969
Photographic Resolution Capabilities of the		
KS-78A Camera Subsystem)		
R&D Plan for Army Applications of AI/ROBOTICS	ETL-0296	1982
Recognition of Handprinted Symbols for Computer-	ETL-CR-71-27	1971
Aided Mapping		
Recording and Scanning Advances in Cartographic EBR Systems	ETL-0265	1981
Reduction and Classification of the Data Base	AD 817 518	1967
List	112 01. 010	
Reduction Procedures for Absolute Direction	RN-14	1965
and Geodetic Azimuths from Optical Observations of Satellites		
Reflection and Identification Studies Applied	ETL-0331	1983
to Terrain Imaging Radar		
Refraction in Selected Model Atmospheres	AD 404 465	1964
Registration of a LANDSAT Image to a DTM —	ETL-0350	1984
An Error Analysis		
Relation Between the Spectrum of Surface Slopes	ETL-RN-70-2	1970
and the Spectrum of Surface Elevations and		
its Usefulness in the Theory of Electro-		
magnetic Wave Scattering from Rough Surfaces		
Relational Data Base Management Study	ETL-0136	1978
7.4.m m m		

TITLE	REPORT NO.	YEAR
Relative Mapping Triangulation Program, Vol. I	AD 721 601	1969
Relative Mapping Triangulation Program, Vol. II	AD 721 602	1969
Relative Mapping Triangulation Program, Vol. III	AD 721 603	1969
Relative Mapping Triangulation Program, Vol. IV	AD 721 604	1969
Remote Sensing Field Guide - Desert	ETL-0588	1991
Remote Sensor Image Capabilities for Acquisition	ETL-0054	1976
of Terrain Information	212 000 .	
	52-TR	1970
Remote Sensor Imagery Analysis for Location of Construction Materials in the Mekong Delta-	<i>72</i> 110	33 7 3
Project SAND (Phase II) Replacement of Photographic Imagery Equipment	ETL-0038	1976
(RPIE)		
Report on Atmospheric Obstructions to Visibility:	ETL-0169	1979
Volume I — Study Results	PPI 0150	1070
Report on Atmospheric Obstructions to Visibility:	ETL-0170	1979
Volume II — Results of Literature Search	•	
Representation, Modeling and Recognition of		1000
Outdoor Scenes	TEC-0046	1993
Representation, Modeling and Recognition of		1004
Outdoor Scenes, Second Annual Report	TEC-0057	1994
Representation, Modeling and Recognition of	mm.c. 00##	1006
Outdoor Scenes	TEC-0077	1996
Research and Design of a PROM Coherent Optical	ETL-0219	1980
Processor	02 TD	1965
Research and Development Acceptance Test Report	23-TR	1903
Surveying Instrument: Azimuth, Gyro, Light-		
weight (Lear Siegler, Inc. Models)	AD (52 001	1067
Research and Development of a Prototype Laser	AD 673 291	1967
Point Marking Instrument	E001 0417	1006
Research in Expert Interactive Cartographic Systems	ETL-0417	1986 1986
Research in Knowledge-Based Vision Techniques for	ETL-0444	1980
the Autonomous Land Vehicle Program		
(June 1, 1985 - May 31, 1986)	TITT 0.400	1007
Research in Knowledge-Based Vision Techniques for	ETL-0482	1987
the Autonomous Land Vehicle Program		
(June 1, 1986 - May 31, 1987)	TITTI 0.500	1000
Research in Knowledge-Based Vision Techniques for	ETL-0522	1988
the Autonomous Land Vehicle Program		
Third Annual Report	TITY 0545	1000
Research in Knowledge-Based Vision Techniques for	ETL-0545	1989
the Autonomous Land Vehicle Program		
Final Annual Report		
Research in Model-Based Change Detection and Site	mma 00#0	1006
Model Updating	TEC-0079	1996
Research in Space Photogrammetry	AD 722 789	1961
Research in Surveying, Mapping and Geodesy	AD 230 066	1959

TITLE	REPORT NO.	YEAR
Research Institute Lectures on Geography Research on Refinement and Interpretation of	ETL-SR-71-1 AD 831 840	1971 1968
Gravity Anomaly Computations Research Studies Related to Mapping, Geodesy, and Position Determination — Summary Report		1960
Research Studies Related to Mapping, Geodesy, and Position Determination	AD 286 300	1961
Research Studies Related to Mapping, Geodesy, and Position Determination		
Interim Report No. 10	AD 286 297	1961
Interim Report No. 11	AD 286 298	1961
Interim Report No. 13	AD 286 299	1962
Interim Report No. 14	AD 284 969	1962
Interim Report No. 15	AD 298 584	1962
Research Studies Related to Mapping, Geodesy, and Position Determination — Final Report	AD 402 602	1963
Results of Earth Observation Study on STS-31 for Terra Geode	TEC-0009	1992
Results of Space Triangulation Adjustments from Satellite Data	RN-13	1965
Review and Analysis of U.S. Army Geodetic SECOR System and Development	AD 818 483	1962
Review of New Geographic Methods and Techniques, Vol. I	AD 700 151	1969
Review of New Geographic Methods and Techniques, Vol. II	AD 700 176	1969
Review of Photosensitive Materials for Holographic Recordings	ETL-0128	1978
Road Boundary Detection for Autonomous Vehicle Navigation	ETL-0407	1985
Road Detection on Radar Imagery	ETL-0403	1985
Robotic Vehicle Terrain-Navigation Subsystem: Conceptual Design Phase	ETL-0332	1983
Robust Image Understanding - Techniques and Applications - First Annual Report	ETL-0580	1990
Robust Image Understanding - Techniques and Applications - Second Annual Report	TEC-0050	1993
RPIE Symbol Placement Accuracy	ETL-0076	1976
Ruggedized Geodetic SECOR		1964
Ruggedized Geodetic SECOR System	AD 722 642	1967
RWPF Spatial Data Study	ETL-0367	1984
Sand and Dust Considerations in the Design of Military Equipment	ETL-TR-72-7	1972
Satellite Angulateration	RN-16	1965

TITLE	REPORT NO.	YEAR
Satellite Geodesy Based on Stellar Orientation of Lines Between Unknown Stations	RN-32	1969
	ETL-0361	1984
Satellite Observations of Widespread Fog	ETL-0064	1976
Satellite-to-Satellite Tracking for Orbit	212 000	
Improvement and Determination of a		
1° x 1° Gravity Field	ETL-SR-74-6	1974
Satellite-to-Satellite Tracking Study for the		
Global Positioning System (Rotating-Y		
Configuration)		
Satellite, U.S. Army Type II, Geodetic, Final Report	AD 871 283	1963
Volume 1	AD 871 284	1964
Volume 2, Appendix, Antenna Patterns	AD 871 285	1964
Volume 3, Appendix, Environmental Test Results	AD 6/1 203	1704
Scalable Processing for Distributed Simulation and	TEC-0065	1995
Scene Generation	ETL-CR-71-16	1971
Scale Problems in Geographic Research	ETL-0270	1981
Scattering from a Vegetation Layer with an	E1L-02/0	1701
Irregular Vegetation Soil Boundary	ETL-0125	1977
Scattering of a Code-Modulated Radio Signal	E1L-0123	17//
and Associated Multipath Range Errors	TOTAL OROO	1982
Scene Classification Results Using the	ETL-0300	1702
Max-Min Texture Measure	ETT 0106	1977
Selected Bibliography of Corps of Engineers	ETL-0126	13//
Remote Sensing Reports		
Selection of Climate Station Data Using Clustering	TEC-0041	1993
and Triangulated Irregular Network Techniques	ETL-ETR-71-4	1971
Semiautomatic Coordinate Reader	ETL-0051	1975
Semi-Automatic Pass Point Determination	E11-0021	1773
Using Digital Techniques	ETL-0297	1983
Sensing Array System with Image Statistics	E1L-0297	1705
Processing, A	ETL-0544	1989
Sentinel Satellite Positional Precision Derived	E1L-0344	1707
from the NAVSTAR Global Positioning System	AD 805 606L	1966
Sequential Independent Model Block Analytical	AD 603 000L	1700
Triangulation (SIMBAT)	1422-TR	1955
Service Tests and Subsequent Modifications and	1422-1 K	1933
Tests of Compass, Sun, Universal, 0 to 90		
Degrees North and South Latitudes, with Case	ETI 0250	1981
Shaded Relief Images for Cartographic	ETL-0259	1701
Applications	ETI 0452	1987
Shape from Projecting a Stripe Pattern	ETL-0453 ETL-CR-72-18	1972
Side-Looking Radar Data Requirements for	E1L-UN-/2-10	1712
Automated Mapping on the UNAMACE	יי דס	1965
Side-Looking Radar Presentation Viewing and	22-TR	1702
Measuring Instrument		

TITLE	REPORT NO.	YEAR
Signal Signatures of Topographic Features Using Analog Technology	ETL-0185	1979
Simple Analytical Methods for Estimating Short- Term Rainfall	ETL-0441	1986
Simple Computer Database System for UNIX, A	ETL-0494	1988
Simplified Electrostatic Color Printing	ETL-0421	1986
Simulation of a Radar Image for Garden City Test Site	ETL-0007	1975
Single-Lens, Four-Channel Multiband Camera (Report No. 3 in the ETL Series on Remote Sensing)	ETL-ETR-74-4	1974
Single Photo Analysis of Sampled Aerial Imagery	ETL-RN-74-10	1974
Site Model Based Image Registration and Change		
Detection - First Annual Report on RADIUS		
Project	TEC-0055	1994
Smart Environmental Monitor Based on Neural Networks		
and Multi-Spectral Pattern Recognition	TEC-0048	1993
Smart Mapping, Charting and Geodesy Control	ETL-0458	1987
Generator, Phase I, A		
Smart Mapping, Charting and Geodesy Control	ETL-0523	1988
Generator, Phase II, A		
Software Conversion of Standard Linear Format	ETL-0394	1985
(SLF) to Standard Interchange Format (SIF)		
Software System Description for Minefield Site	ETL-0449	1987
Prediction Expert System		
Solution of the General Analytical	AD 202 318	1958
Aerotriangulation Problem		
Some Relations Between the Geometrical Quality	RN-7	1962
of Topographic Mapping and Aerial		
Photogrammetry		
Sparse Area Stereo Matching Experiment	ETL-0424	1986
Spatial Data Structures for Robotic Vehicle	ETL-0520	1988
Route Planning		
Spatial Light Modulators: Test and Evaluation	ETL-0192	1979
Spatial Sampling: A Technique for Acquisition	ETL-CR-71-11	1971
of Geographic Data from Aerial Photographs		
and Maps		
Spatial Target Location Errors Derived From	ETL-0532	1989
Measurements Collected From Sixteen Satellite		
Constellations		
Spectral Reflectivity Data: A Practical	AD 880 049L	1970
Acquisition Procedure		
Spectral Signatures of Wetlands Plants (350-990nm)	TEC-0068	1995
Spectral/Spatial Resolution Targets for Aerial	ETL-TR-74-3	1974
Imagery (Report No. 1 in the ETL Series on		
Remote Sensing)		

TITLE	REPORT NO.	YEAR
Stable Platform Assembly for Army Artillery Inertial Survey System	AD 681 932	1962
Stable Platform Electronics for Army Artillery Inertial Survey System (GEISHA)	AD 681 933	1962
Star Pattern Recognition and Spacecraft Attitude Determination	ETL-0173	1978
Star Pattern Recognition and Spacecraft Attitude Determination, Phase II	ETL-0211	1979
Star Pattern Recognition and Spacecraft Attitude Determination, Final Report	ETL-0260	1981
STARAN Image Processing Stars' Position Determined by Combining	ETL-0243 RN-20	1980 1967
Micrometric Observation with an Observed Known Star in a Vertical Plane Close to the Meridian		
State-of-the-Art Assessment of Automatic Name Placement, A	ETL-0427	1986
State-of-the-Art of Slope Mapping Statistical Analysis of Geomorphic, Petrographic and Structural Characteristics of the Dartmoor	ETL-0060	1976
Tors, Southwest England Status of Aerial Color Photography in	TEC-0027 TB-1	1993 1968
Government Agencies Stereo Analysis of a Specific Digital Model Sampled from Aerial Imagery	ETL-0072	1976
Stereo Radar Analysis Stereo Radar Techniques Study, Phase I,	AD 903 321L AD 800 171L	19 <b>7</b> 0 1966
Vol. 1 — Analysis Stereoplotter, Topographic, Projection-Type	1627-TR	1960
High Precision Stereoscopic Terrain Display for Measurement Applications	ETL-0002	1974
Stress Analysis, Study of the M4 Van Expansible and Adapter, Detachable Running Gear	AD 636 445	1966
Structural Analysis from Radar Imagery, Eastern Panamanian Isthmus	AD 715 322	1970
Studies in Zinc Oxide Photoconductivity Studies of Gravity in Space According to	AD 673 836 AD 485 687L	1968 1966
Bjerhammer Study and Analysis of the Position and Azimuth Determining System (PADS) Field Maintenance	ETL-CR-74-22	1974
Concept Study and Analysis of the Position and Azimuth Determining System (PADS) for Mapping, Charting, and Geodesy Applications	ETL-CR-73-12	1973

TITLE	REPORT NO.	YEAR
Study and Prototype Model Design of a	AD 462 322	1964
Miniaturized Gyrocompass, Interim		
Study and Prototype Model Design of a	AD 465 330	1965
Miniaturized Gyrocompass, Final		
Study of a Digital Interface Design for the	ETL-0327	1983
Quick Response Multicolor Printer (QRMP)		
Study of Army Requirements for Mapping, Charting,		
and Geodesy/Digital Topographic Data, A	TEC-0085/0085A	1996
Study of Classification and Nomenclature of	ETL-0058	1976
Vegetation		
Study of Digital Matching of Dissimilar Images	ETL-0248	1980
Study of Environmental Monitoring and	ETL-CR-72-1	1972
Information Systems		
Study of Knowledge-Based Systems for Photo	ETL-0235	1980
Interpretation		
Study of Lithographic Fountain Solutions	AD 830 674L	1967
Study of Panoramic-Metric Image Matching for	AD 474 839L	1965
Photogrammetric Instrumentation		
Study of Potential Application of Holographic	ETL-CR-70-8	1970
Techniques to Mapping (Interim Report)		
Study of Potential Application of Holographic	ETL-CR-71-17	1971
Techniques to Mapping (Final Report)		
Study of Raster Metafile Formats	ETL-0363	1984
Study of Solution of a Large System of	AD 676 849	1968
Linearized Normal Equations and the Inversion		
of the Associated Coefficient Matrix		
Study of Stereophotogrammetric Systems for	1352-TR	1954
Topographic Mapping with Very High Altitude		
Aerial Photography		
Study of Visual Stereoscopic Acuity		1956-1957
Study of the Accuracy of Visual Planimetric	ETL-CR-71-19	1971
Pointings to Photographic Edges with		
Different Characteristics		
Study of the Application of Piezoelectric	AD 486 467L	1966
Techniques to a Small North-Orienting Device		
Study of the Characteristics of the Holographic	ETL-CR-73-14	1973
Stereomodel for Application in Mensuration and		
Mapping (Part I of Final Report)		
Study of the Characteristics of the Holographic	ETL-CR-73-14	1973
Stereomodel for Application in Mensuration and		
Mapping (Part II of Final Report)		
Study of the Effect of Corona Conditions on	ETL-CR-72-17	1972
Electrostatic Processes		
Study of the Effects of Nonhomogeneous Target	AD 722 790	1969
Backgrounds on Photogrammetric Coordinate		
Measurement		

TITLE	REPORT NO.	YEAR
Study of the Human Visual System in Support of Automated Feature Extraction	ETL-0271	1981
Study of the Impact of the Global Positioning System on Army Survey	<b>77.720070</b>	1976
Study of the Interaction of a Positive Corona with Selenium Coatings Relevant to the IFAX Printing Process	ETL-CR-74-7	1974
Study of the Long Range Position Determination System	AD 505 912	1969
Study to Establish a Method of Selecting Input Photographic Material for Automated Compilation Equipment	ETL-CR-71-24	1971
Study to Optimize Performance of the Rapid Geodetic Survey System — Interim Technical Report	ETL-0252	1981
Study to Optimize Performance of the Rapid Geodetic Survey System — Second Interim Technical Report, A	ETL-0264	1981
Study to Optimize Performance of the Rapid Geodetic Survey System — Addendum Report, A	ETL-0321	1983
Subterranean Detection and Analysis (SDA) (U)	TEC-S-0001	1991
Surface Climate of the Arctic Basin	ETL-TR-71-5	1971
Surface Gravity Effects of Subterranean Tunnels	ETL-0069	1976
Surface Materials and Terrain Features of Yuma	ETL-0021	1975
Proving Ground, Part I Summary Description		
Survey of Digital Image Display Systems (Soft Copy)	ETL-0085	1976
Survey of Digital Image Scanning Systems	ETL-0087	1976
Survey of Display Devices (Hard Copy)	ETL-0086	1976
Survey of Mass Storage Systems	ETL-0082	1975
Surveying Instrument: Azimuth, Gyro,	ETL-TR-72-2	1972
Lightweight (SIAGL) (Lear Siegler, Inc.)		
Symbolic Model-Based SAR Feature Analysis and Change Detection	TEC-0010	1992
Synthesis Guide for Cross-Country Movement (Report No. 4 in the ETL Series on Guides for Army Terrain Analysts)	ETL-0220	1980
Synthesis Guide for Helicopter Landing Zone and Drop Zone Sites	ETL-0401	1985
Synthesis Guide for Lines of Communication (Report No. 7 in the ETL Series on Guides for Army Terrain Analysts)	ETL-0263	1981
Synthesis Guide for Obstacle Siting (Report No. 9 in the ETL Series on Guides for Army Terrain Analysts)	ETL-0283	1982

TITLE	REPORT NO.	YEAR
Synthesis Guide for River Crossings	ETL-0344	1983
(Report No. 11 in the ETL Series on Guides		
for Army Terrain Analysts)		
System Analysis of the Entire Topographic	ETL-0390	1985
Support System		
System Analysis of the Entire Topographic	ETL-0158-2	1978
Support System (TSS), Final Report	TIME 0150 1	1050
System Analysis of the Entire Topographic	ETL-0158-1	1978
Support System (TSS), Interim Report	ETI CD 70.2	1070
System and Design Study for an Advanced Drum	ETL-CR-70-3	1970
Plotter September Automated Sight Model Application and	TEC-0062	1995
System for Automated Sight Model Acquisition and Extension - RADIUS, A	1EC-0002	1993
System for Automatic Secure Transmission and	ETL-CR-71-2	1971
Reception of Topographic Information — Maps,		
Photographs, or Alphanumeric Facsimile — at		
TV Rates		
System for Topographic Inquiry — No. 1,	ETL-ETR-74-2	1974
Micrographic Subsystem		
System for Topographic Inquiry — No. 2,	ETL-0003	1975
Alphanumeric Subsystem		
System for Topographic Inquiry — No. 3,	ETL-0004	1975
Alphanumeric Subsystem Data Base Listing	TTT 0005	1055
System for Topographic Inquiry No. 4,	ETL-0005	1975
Program Conversion Procedures	TTI 0021	1075
System for Topographic Inquiry — No. 5,	ETL-0031	1975
Alphanumeric Subsystem Users Guide	AD 476 273L	1965
Systematic Correction and Weighing of Analogue Aerial Triangulation Observations and Their	AD 470 273L	1703
Use in Strip and Block Adjustments		
Systematic Investigations of Geodetic Networks	AD 482 852L	1966
in Space, Interim	110 100 000	2700
Systematic Investigations of Geodetic Networks	AD 815 717	1967
in Space, Final		
Systems Concepts for Military Geographic		1967
Intelligence, Vol. I		
Tactical/Strategic Point Positioning Study	ETL-0319	1981
Target Location Errors Derived From a	ETL-0531	1989
Hypothetical Target Tracking System	TEC 0070	1006
Task-Driven Active Vision for Security and Surveillance	TEC-0070	1996 1980
Technical Data on KC-Film, Toners, and Processes	ETL-0224	1980 1972
Technical Report for Automatic Line Follower	ETL-CR-72-18 ETL-0400	1972
Techniques to Improve Astronomic Positioning in the Field	E1L-0400	1703

TITLE	REPORT NO.	YEAR
Technology Requirements for Minefield Detection		
from Space	TEC-0056	1994
Television Display of Topographic Information	ETL-CR-70-7	1970
Television Display of Topographic Information,	ETL-CR-71-23	1971
Phase II		
Terrain Analysis Procedural Guide for Built-Up	ETL-0352	1984
Areas (Report No. 13 in the ETL Series on		
Guides for Army Terrain Analysts)		
Terrain Analysis Procedural Guide for Climate	ETL-0247	1980
(Report No. 5 in the ETL Series on Guides		
for Army Terrain Analysts)		
Terrain Analysis Procedural Guide for Drainage and	ETL-0285	1982
Water Resources (Report No. 8 in the ETL		
Carina an Caridae for Army Terrain Analysts)		
Series on Guides for Army Terrain Analysts)	ETL-0207	1979
Terrain Analysis Procedural Guide for Geology		
(Report No. 3 in the ETL Series on Guides		
for Army Terrain Analysts)	ETL-0311	1982
Terrain Analysis Procedural Guide for Railroads (Report No. 10 in the ETL Series on Guides		
for Army Terrain Analysts)	ETL-0205	1979
Terrain Analysis Procedural Guide for Roads		
and Related Structures (Report No. 2 in the		
ETL Series on Guides for Army Terrain Analysts)	ETL-0254	1981
Terrain Analysis Procedural Guide for Soil	DID VII.	
(Report No. 6 in the ETL Series on Guides		
for Army Terrain Analysts)	ETL-0352	1984
Terrain Analysis Procedural Guide for Surface	D1D 0002	
Configuration (Report No. 12 in the ETL Series		
on Guides for Army Terrain Analysts)	ETL-0178	1979
Terrain Analysis Procedural Guide for	11110110	
Vegetation (Report No. 1 in the ETL Series		
on Guides for Army Terrain Analysts)	ETL-0231	1980
Terrain Analyst Synthesizer Station	ETL-0470	1987
Terrain Analyst Work Station (TAWS):	EIE O	
1AD After Action Report	ETL-TR-74-7	1974
Terrain Data of Mount Hayes D-4 Quadrangle,	DID-IR / I /	
Fort Greely, Alaska (Report No. 4 in the ETL		
Series on Remote Sensing)	ETL-0010	1975
Terrain Effects Analysis Routine for an MGI	E1E-0010	1775
System	AD 649 347	1967
Terrain Eigenvector Dyad Analysis	ETL-CR-72-13	1972
Terrain Factor Analysis and Automatic Color	L1L-CK-12-13	1712
Coded Mapping Utilizing the IDECS	TEC-0003	1991
Terrain Modeling: Shortest Path, Drain Patterns,	1EC-0003	1//1
and Interspersed Contours		

TITLE	REPORT NO.	YEAR
Terrain Visualization for the Portable All-Source	TEC-0011	1992
Analysis Work Station Test and Evaluation of a Baudot-FIELDATA Code	15-TR	1963
Converter, Paper Tape		
Test and Evaluation of 9 by 18 Rectifier for	1460-TR	1956
12- and 24-inch Focal Length Photography		
Test and Evaluation of Target Map Coordinate	14-TR	1963
Locator Equipment		
Test and Evaluation of the Analytical	ETL-0293	1982
Photogrammetric Positioning System,		
Advanced (APPS-II)	1 4 77 1 777	1065
Test and Evaluation of the Direct Viewing	1471-TR	1957
Stereoplotter, Wernstedt-Mahan Type	1 <i>5.</i> (0 TD	1050
Test and Evaluation of the Headliner, Model 400	1568-TR 3-TR	1959 1961
Test and Evaluation of the Interim Halcon	3-1K	1901
Mapping System Test and Evaluation of the Interim Stereo-	1493-TR	1957
	1495-110	1757
plotter, Topographic, Projection-Type, High Precision		
Test and Evaluation of the Kelsh Plotter,	1311-TR	1953
Model 5000, Manufactured by the Instruments Corp.		
Test and Evaluation of the Near Real Time	ETL-0281	1982
Exploitation System		
Test and Evaluation of the Prototype Side-Looking	29-TR	1966
Radar Presentation Restitutor		
Test and Evaluation of the Santoni Cartographic	1644-TR	1960
Stereomicrometer		
Test and Evaluation of the 720 Plotter	1348-TR	1954
Manufactured by Bausch and Lomb Optical Co.		
Test and Evaluation of the Stereopontometer	1381-TR	1954
and Adapted Multiplex		
Test and Evaluation of the Stereopontometer with	1425-TR	1955
Kelsh-Type Stereoplotters	1741 TD	1000
Test and Evaluation of Ultrasonic Scribing	1641-TR	1960
Equipment	1537-TR	1958
Test and Investigation of the Photonymograph (PN-4)	1357-1K	1936
Test of Map-Read Magnetic Declination Accuracy	ETL-148	1978
Test of Reconnaissance Photographic Transposer	1566-TR	1959
AN/GSH-1		
Test Results of a Singer, Kearfott Division	ETL-0238	1980
Modified Land Navigation System		
Test Results of the Lear Siegler, Singer and	ETL-0288	1982
Sperry Gyro Heading Reference Systems		
Test Results of the Litton Low-Cost Semi-	ETL-0202	1979
Strapped-Down Inertial Land Navigation System		

TITLE	REPORT NO.	YEAR
Test Strategy for High Resolution Image Scanners, A	ETL-0345	1983
Testing and Evaluation of the Shiran System by Advanced Data Reduction Methods	AD 707 418	1969
Testing of an Experimental Viscous-Friction Coupled Small North Orienting Device	AD 822 011	1967
Tests and Evaluation of an Automatic Point Reading, Plotting, and Grid Ruling Machine	8-TR	1962
Tests and Evaluation of an Earth Curvature  Correction Device	10-TR	1963
Tests and Evaluation of the AS-11A Stereoplotter Tests and Evaluation of the Zeiss Stereotope	50-TR 1567-TR	1969 1959
Stereoplotting Instrument Tests and Evaluation of Ultrawide-Angle Mapping	6-TR	1961
Photography Tests and Evaluations of Precision	1-TR	1961
Coordinatographs Tests of Basic Geometrical Qualities of	RN-5	1962
Photogrammetric Plotting Instrument	Id ( )	1964
Tests on the Change Detector Texture Analysis and Cartographic Feature Extraction	ETL-0370	1985
Texture Tone Study — Category Maps, Gradient and Homogeneity Images	ETL-CR-73-10	1973
Texture Tone Study — Classification Experiments Texture Tone Study (Quantizing on the IDECS/PDP)	ETL-CR-72-16 ETL-CR-72-3	1972 1972
Texture Tone Study: Summary and Evaluation Texture Tone Study with Application to Digitized	ETL-0005 TR-182-1	1975 1970
Imagery	ETL-CR-71-14	1971
Texture Tone Study with Application to Digitized Imagery (Interim Report)	ETL-CR-74-17	1974
Texture Tone Study with Application to Digitized Imagery (Final Report)	AD 662 080	1967
Theodolite with Shaft Angle Encoder and Display Theoretical and Experimental Study of Wave	ETL-CR-74-4	1974
Scattering from Composite Rough Surfaces Thermal Infrared Spectra of Natural and Man-Made	ETL-0587	
Materials: Implications for Remote Sensing Third-Order Co-Occurrence Texture Analysis Applied to Samples of High Resolution	ETL-0396	1985
Synthetic Aperture Radar Imagery Three Approximate Methods for Estimating the Best Subset of GPS Satellites Position Calculations	ETL-0556	1990
Three-Dimensional Modeling Station, Phase II Three-Dimensional Road Structure from Motion Stereo	TEC-0084 ETL-0471	1996 1987

TITLE	REPORT NO.	YEAR
Tight Upper Bound for the Speed-Up of Parallel Best-First Branch-and-Bound Algorithms, A	ETL-0462	1987
Topographic Data Output Study	AD 262 161L	1961
Topographic Eigenvector Analysis	AD 484 747L	1966
Topographic Radar Mapping Systems Design Study		1968
Topographic Relaxation Study	ETL-0209	1979
Total Optical Color System (Report No. 2	ETL-ETR-74-3	1974
in the ETL series on Remote Sensing)		
Toward Automatic Extraction of Cartographic	ETL-0153	1978
Features		15,0
TPLOT: A Simple Program for Plotting Percent	ETL-RN-74-2	1973
Composition Data on Ternary Diagrams		
Training Course on Data Reduction of Radar	AD 721 653	1969
Topographic Imagery		
Transformation of Coordinates of Cartographic	ETL-TR-74-8	1974
Digital Data		
Transformations for Dimension Reduction and	ETL-RN-74-3	1974
Expansion of the Discrete Fourier Transform		
Under Scanning		
Transforming Printers: Acceptance and Engineering	40-TR	1968
Tests		
Transitional Design Study of the Position and	ETL-0001	1975
Azimuth Determining System (PADS)		
Tribrach, Universal	1453-TR	1956
Tripod, Universal, Final Report on Project	1413-TR	1955
8-35-10-107		
Two Approaches to a Portable Color-Measuring	RN-15	1966
System		
Two-Dimensional Path Planning with Obstacles	ETL-0452	1987
and Shadows		
Two-Way Linear Interpolation	ETL-RN-71-5	1971
Type I Geodetic Satellite	AD 721 652	1964
Typro Composer Photolettering Machine	1504-TR	1957
TRANSPARTION ' A TO OTHE	TEC-0082	1996
UMASS RADIUS Project - Year 2, The	ETL-0144	1978
Unified Approach to Mapping, Charting, and Geodesy (MC&G) Data Base Structure Design	E1L-0144	17/0
Unified Geodetic Parameter Program (GEOPS),	AD 640 321	1966
Vol. 1 of 2 — Mathematical Analysis	AD 040 321	1700
	AD 640 322	1966
Unified Geodetic Parameter Program (GEOPS),	AD 040 322	1700
Vol. 2 of 2 — Program Description	24-TR	1965
Universal Analog Rectification System for	4T-11X	1703
Map Revision	51-TR	1969
Universal Automatic Map Compilation Equipment	AD 487 144L	1966
Universal Radar Signal Processor (Correlator),	ATT TOT TTL	1700
Interim		

TITLE	REPORT NO.	YEAR
Universal Radar Signal Processor (Correlator),	AD 841 545L	1968
Final Urban Warfare Digital Database SBIR Phase I	TEC-0042	1992
U.S. Army Evaluation of the Electronic Map Data (EMD) Prototype U.S. Army Type II Geodetic Satellites, Vol. 1	TEC-0026 AD 721 645	1992
1965 U.S. Army Type II Geodetic Satellites, Vol. 2 1965	AD 721 646	
U.S. Army Type II Geodetic Satellites, Vol. 3 1965	AD 721 647	
Use and Calibration of Distance Measuring Equipment for Precise Mensuration of Dams	ETL-0048	1976
(Revised) Use and Calibration of Distance Measuring	ETL-0190	1979
Equipment for Precise Mensuration of Dams Use of a Vidicon to Digitize Certain Types of	AD 457 818L	1964
Target Image in a Photographic Background Use of Array Algebra in Terrain Modeling	ETL-0094	1976
Procedures Use of Edges of Photographic Images as	ETL-CR-72-15	1972
Specifiers of Image Quality Use of Interim Terrain Data to Populate Project 2851's Database in Support of Ground Forces Simulation	ETL-0591	1991
Use of Radar Images in Terrain Analysis: An Annotated Bibliography	ETL-0024	1975
Use of Side-Looking Airborne Radar (SLAR) Imagery for Engineering Soils Studies	46-TR	1969
User's Guide for the Analytical Photogrammetric Positioning System (APPS), A	ETL-0446	1986
User's Guide to Data Preparation, Photogrammetric Navigation Analysis Program Fotonap	ETL-0174	1978
User's Manual for the Reference Scene Software (RSS) Using Terrain Analysis to Predict Likely	ETL-0066 ETL-0325	1976 1983
Minefield Sites Utility of Radar Imagery in the Production of Tactical Terrain Data. Military	ETL-0045	1975
Capabilities Report Utilization of a Photogrammetric Facility (PF) in Human Engineering Laboratories Battalion Artillery Test Number Two (HELBAT II)	ETL-SR-71-2	1971
Variscale Stereo Point Marking Instrument Vegetation and Terrain Effects on Digital Classification of LANDSAT Imagery	39-TR ETL-0292	1968 1982

TITLE	REPORT NO.	YEAR
Vegetation and Terrain Relationships in South-Central New Mexico and Western Texas	ETL-0245	1980
Vegetation Data Extraction Software  Documentation/User's Manual	ETL-0340	1983
Vegetative Cover Effects on Soil Spectral Reflectance	ETL-0284	1982
Vertical Obstruction Study, Final Report	ETL-0358 ETL-0229	1984 1980
Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing	E1L-0229	1760
Vision-Based Navigation and Parallel Computing First Annual Report	ETL-0548	1989
Vision-Based Navigation and Recognition	TEC-0047	1994
Vision-Based Navigation and Recognition, Second Annual	TEC-0061	1995
Visual Factors Affecting the Precision of	RN-21	1967
Coordinate Measurement in Aerotriangulation		
Visual Navigation System for Autonomous Land	ETL-0408	1985
Vehicles, A		
Vision-Based Navigation and Parallel Computing	ETL-0572	1990
Second Annual Report		
Vision-Based Navigation for Autonomous Ground		
Vehicles, Fourth Annual Report	TEC-0028	1992
Vision-Based Navigation for Autonomous Ground	ETL-0432	1986
Vehicles, 1986 Annual Report		
Vision-Based Navigation for Autonomous	ETL-0509	1988
Ground Vehicles, First Annual Report		
Vision-Based Navigation for Autonomous	ETL-0519	1988
Ground Vehicles, Third Annual Report	TT 0540	1000
Vision-Based Navigation for Autonomous	ETL-0543	1989
Ground Vehicles, Summary Report	TITE 00 40	1004
Voice Interactive Systems Technology (VIST) Research	ETL-0349	1984
Voice Interactive Systems Technology (VIST) Research	ETL-0349	1984
Water Resources Overlays Users Guide	TEC-SR-3	1990
Weather Extremes Around the World (Revision of NLABS Report TR-70-45-ES)	ETL-TR-74-5	1974
Weighted Line-Finding Algorithm	ETL-0200	1979
What is a Hill? An Analysis of the Meaning of Generic Topographic Terms	ETL-0576	1991
Wind Design Criteria for Field Shelters — A Study	ETL-0037	1975
Wire List GEISHA Computer	AD 847 667	1969
World Areas More Humid Than the Canal Zone	ETL-RN-74-8	1974
during the Wet Season (Note 3 of "Studies to		
Aid TECOM in Analyses of Environmental Risks to Materiel")		

TITLE	REPORT NO.	YEAR
World Areas with Higher Precipitation Intensities and Frequencies than the Tropic	ETL-0022	1975
Test Center, Canal Zone World Areas with Higher Temperatures than the Yuma Proving Ground During Summer (Note 2 of "Studies to Aid TECOM in Analyses of	ETL-RN-74-6	1974
Environmental Risks to Materiel") World Areas with Lower Temperatures than the Arctic Test Center During Winter (Note 1 of "Studies to Aid TECOM in Analyses of	ETL-RN-74-5	1974
Environmental Risks to Materiel")	ETL-0416	1985
World Weather Extremes Worldwide Distributions of Ambient Temperatures and Temperatures of Materiel Exposed to Direct Solar Radiation	ETL-SR-73-2	1972
Worldwide Distribution of Mean Dewpoint: Surface and Lower Atmosphere	ETL-SR-72-4	1972
Worldwide Distribution of Mean Monthly Dewpoint (Supplement to ETL-SR-72-4 "Worldwide Distributions of Mean Dewpoint: Surface and Lower Atmosphere")	ETL-SR-72-2	1973
Xerox 6500 Color Copier	ETL-0106	1977
Zoom Transfer Scope	ETL-ETR-72-5	1972